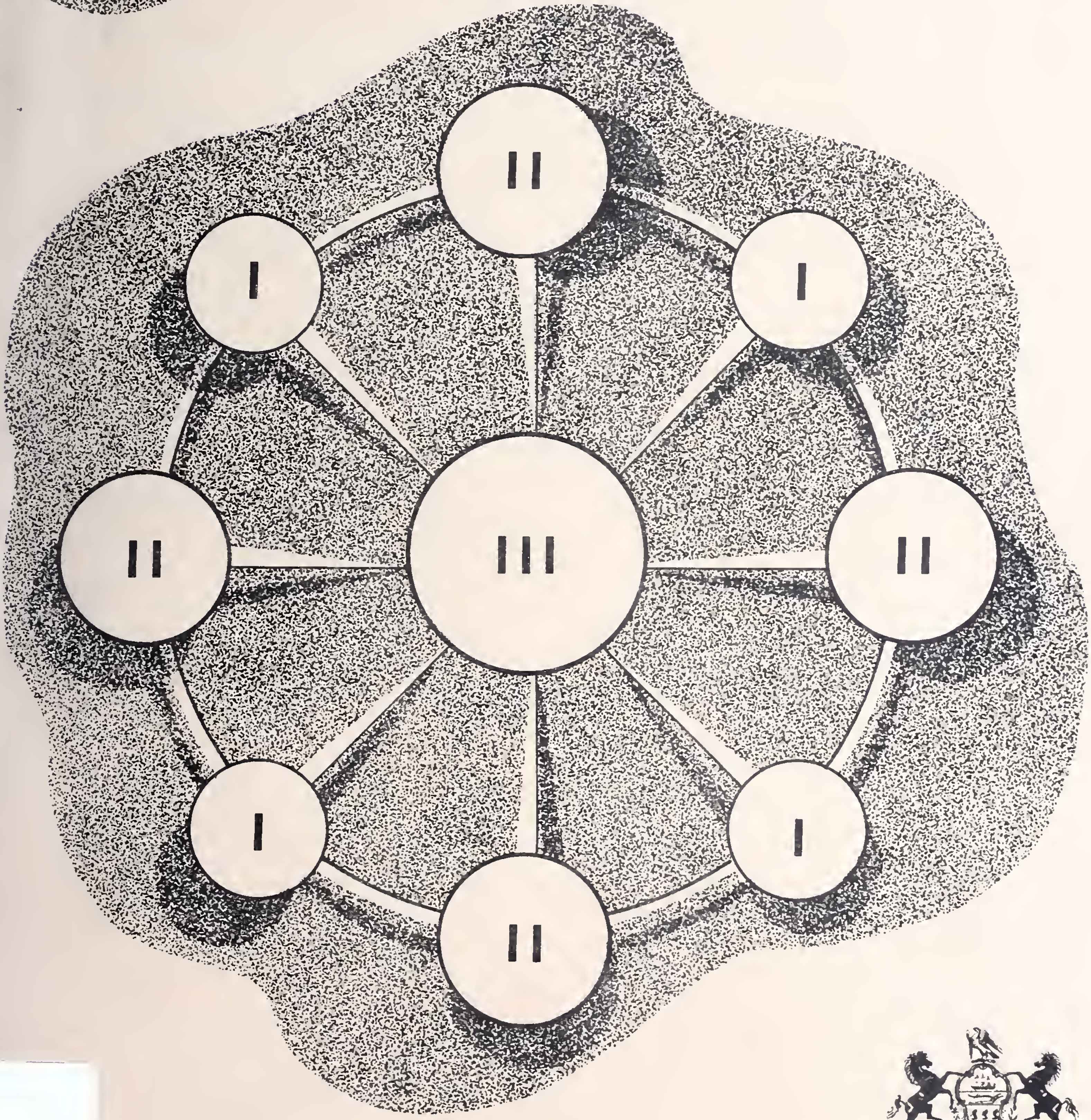
Governor's Health Task Force

of the Committee On Infant Intensive Care



Commonwealth of Pennsylvania

January, 1974

Report prepared by: G. Allan, M.D.; T. R. Boggs, M.D.;
E. L. Clark, M.D.; M. P. Ghiates, D.O.;
A. R. Hervada, M.D.; N. Kendall, M.D.;
H. Leinbach, M.D.; W. J. Miller, R.N.:
N. M. Nelson, M.D.; G. J. Peckham, M.D.;
T. R. C. Sisson, M.D.

Copies may be obtained from:

Gordon Allan, M.D.
Director, Bureau of Children's Preventive and
Restorative Services
Department of Health
Commonwealth of Pennsylvania
Harrisburg, Pennsylvania

THE MILTON S. HERSHEY MEDICAL CENTER
THE PENNSYLVANIA STATE UNIVERSITY

Associate Dean for Education
HERSHEY, PENNSYLVANIA 17033

January 31, 1974

Leonard Bachman, M.D.
Governor's Health Service Director
Office of the Governor
Commonwealth of Pennsylvania
Harrisburg, Pennsylvania 17120

Dear Dr. Bachman:

I have the honor to submit a report from the Committee on Infant Intensive Care of the Governor's Health Task Force.

We have met approximately monthly since our charge by you to provide information and recommendations towards improvement of care for newborns in the Commonwealth. We now put before you eleven recommendations designed to reduce substantially neonatal and, hence, infant mortality in Pennsylvania.

The concept emphasized is that of consolidation and regionalization of perinatal services so as to provide critical masses of qualified health care personnel near to or within programmed access of the perinatal populations identified as at risk. An educational program is suggested as well as a plan for meaningful financial support.

Realizing that the successful implementation of our recommendations, once accepted, will require some years of continued and dedicated effort by many, we have particularly called for the creation of a medical technical and scientific committee that will be continually advisory to the Department of Health.

That committee should presently better fulfill the role in which you have cast us. Therefore, we now consider that this Committee is dissolved.

Sincerely,

Nicholas M. Nelson

Nicholas M. Nelson, M.D.
Professor and Chairman, Department of Pediatrics
Associate Dean for Education
Chairman, Committee on Infant Intensive Care

NMN/js

COMMONWEALTH OF PENNSYLVANIA
OFFICE OF THE GOVERNOR
HARRISBURG

April 27, 1972

Nicholas Nelson, M.D.
Hershey Medical Center
Hershey, Pennsylvania 17033

Dear Nick:

This letter will serve to confirm my telephone conversation to you appointing you Chairman of the Committee on Infant Intensive Care of the Governor's Health Task Force.

Your Committee will be charged with bringing before the Governor's Health Task Force the information and recommendations necessary to create and implement state government policies and toward improving the care of newborn infants. Governor Shapp desires that the state government do everything in its power to substantially reduce infant mortality in Pennsylvania.

I have enclosed for your information a report describing Paul R. Swyer's work in Ontario. A similar program might be applied in Pennsylvania.

The following individuals have been suggested for service on your Sub-Committee. Please react to these names and add others. When we agree on the make-up of your Committee, I will send the individual's letters of appointment.

Best personal regards.

Sincerely,

Len Bachman

Leonard Bachman, M.D.
Governor's Health Service Director

LB/sjs

cc: Terry Dellmuth
Gordon Allan, M.D.

TABLE OF CONTENTS

MEMBERS
COMMITTEE ON INFANT INTENSIVE CARE
GOVERNOR'S HEALTH TASK FORCE

1.	Nicholas M. Nelson, M.D. (Chairman)	Professor and Chairman, Department of Pediatrics The Milton S. Hershey Medical Center College of Medicine The Pennsylvania State University
2.	Gordon Allan, M.D.	Director, Bureau of Children's Preventive and Restorative Services Department of Health Commonwealth of Pennsylvania
3.	Richard E. Alpert, M.D.	Division of Pediatrics Lansdale Medical Group Lansdale, Pennsylvania
4.	Thomas R. Boggs, M.D.	Director, Section on Newborn Pediatrics The Pennsylvania Hospital Philadelphia, Pennsylvania
5.	Eddie Lee Clark, Jr., M.D.	Fellow, American Academy of Family Physicians Private Practice Philadelphia, Pennsylvania
6.	Richard Depp, M.D.	Director, Fetal-Maternal Intensive Care Unit Magee-Women's Hospital, Pittsburgh Assistant Professor of Obstetrics, Gynecology and Pediatrics University of Pittsburgh School of Medicine
7.	Michael P. Ghiates, D.O.	Chairman, Committee on Pediatrics Pennsylvania Osteopathic Medical Association Sharon, Pennsylvania
8.	Arturo R. Hervada, M.D.	Chairman, Department of Pediatrics Mercy Catholic Medical Center of Southeastern Pennsylvania (Fitzgerald Mercy Division) Darby, Pennsylvania
9.	Norman Kendall, M.D.	Professor of Pediatrics and Director of Newborn Services Temple University School of Medicine
10.	Harvey Leinbach, M.D.	Fellow, American Academy of Pediatrics Private Practice West Reading, Pennsylvania

11.	William J. Miller, R.N.	Director of Nursing Hospital of the Medical College of Pennsylvania
12.	Thomas K. Oliver, Jr., M.D.	Professor and Chairman, Department of Pediatrics University of Pittsburgh School of Medicine Medical Director Children's Hospital of Pittsburgh
13.	George J. Peckham, M.D.	Medical Director, Infant Intensive Care Unit Children's Hospital of Philadelphia
14.	Alexander Randall, IV, M.D.	Fellow, American Academy of Pediatrics Private Practice Abington, Pennsylvania
15.	Thomas R. C. Sisson, M.D.	Associate Professor of Pediatrics and Director of Neonatal Research Temple University School of Medicine Chairman, Fetus and Newborn Committee - Pennsylvania Chapter, American Academy of Pediatrics
16.	Victor C. Vaughan, III, M.D.	Professor and Chairman, Department of Pediatrics Temple University School of Medicine Medical Director, St. Christopher's Hospital for Children
17.	Virginia E. Washburn, M.D.	Commissioner of Health Region IV Pennsylvania Department of Health Pittsburgh, Pennsylvania
18.	Ernest R. Williams, M.D.	South Philadelphia Health Action, Inc.

CONSULTANTS

1.	Lillian R. Blackmon, M.D.	Assistant Professor of Pediatrics Medical College of Georgia Associate Director, Georgia Regional Medical Program Project
2.	Girard P. Conva, Major	Department of Military Affairs Pennsylvania National Guard
3.	William Dixon	Data Processing Division Bureau of Vital Statistics Department of Health Commonwealth of Pennsylvania
4.	Stanley N. Graven, M.D.	Professor of Pediatrics, University of Wisconsin Director, Infant Intensive Care Unit Wisconsin Perinatal Center (South Central Region) Madison, Wisconsin
5.	James M. Mead	Office of the Insurance Commissioner Commonwealth of Pennsylvania
6.	A. Frederick North, M.D.	Visiting Professor University of Pittsburgh Graduate School of Public Health
7.	Nicholas Pauley, Captain	Aviation Division Pennsylvania State Police
8.	Ann H. Pettigrew, M.D.	Acting Director, Division of Medical Care Department of Public Health Commonwealth of Massachusetts
9.	Harry Prystowsky, M.D.	Provost, The Milton S. Hershey Medical Center Dean, College of Medicine The Pennsylvania State University - formerly Professor and Chairman, Department of Obstetrics and Gynecology, College of Medicine University of Florida
10.	John E. Rowland	Director, Division of Emergency Health Services Department of Health Commonwealth of Pennsylvania
11.	Vincent Stenger, M.D.	Professor and Chairman, Department of Obstetrics and Gynecology The Milton S. Hershey Medical Center College of Medicine The Pennsylvania State University Consultant to the Division of Maternal and Child Health, Department of Health Commonwealth of Pennsylvania

FOREWORD

Infant mortality rates (deaths at less than 1 year of age per 1000 live births) have been decreasing steadily over the past generation (Table 1).

Table 1

INFANT AND NEONATAL MORTALITY

	1969	1970	1971	1972
NEONATAL MORTALITY				
United States	15.4	14.9	14.3	13.7
Pennsylvania	16.2	15.8	14.1	13.7
INFANT MORTALITY				
United States	20.7	19.8	19.2	18.5
Pennsylvania	20.9	20.2	18.3	17.8
PERCENT $\left(\frac{\text{Neonatal}}{\text{Infant}}\right)$				
United States	74.4%	75.3%	74.4%	74.1%
Pennsylvania	77.5%	78.2%	77.0%	77.0%

Neonatal deaths (those occurring from birth through 28 days of age) have consistently accounted for about 3/4 of all infant deaths (Table 2).

Table 2

INFANT DEATHS

PENNSYLVANIA, 1971

Age	% Neonatal Deaths	Cumulative % Infant Deaths
<1 day	62.1%	47.8%
1-6 days	30.3%	71.1%
7-27 days	7.6%	77.0%
28 days-1 year	---	100.0%

About 1/2 of these deaths are due to 3 conditions (asphyxia, hyaline membrane disease, immaturity) which are increasingly responsive to newer techniques of newborn care (Table 3).

Table 3

CAUSES OF NEONATAL DEATH

PENNSYLVANIA, 1971

Complications of pregnancy, labor and delivery	29.8%
Asphyxia at birth	18.6%
Hyaline membrane disease (in premature infants)	17.2%
Immaturity (without hyaline membrane disease)	12.6%
Congenital anomalies (non-cardiac)	10.3%
Congenital heart disease	5.1%
Other	6.4%
	100.0%

In comparison with other neighboring or populous states, Pennsylvania's infant mortality record is competitive. New Jersey, Maryland and California have better records, however. Moreover, those states which have regionalized their systems for newborn care display the best records and Sweden, a country whose whole medical care system is regionalized, has generally become a reference standard of excellence (Table 4).

Table 4

INFANT MORTALITY

	1969	1970	1971	1972
BORDERING STATES				
Delaware	21.9	19.4	14.4	18.9
Maryland	19.9	19.4	18.0	15.8
New Jersey	19.3	19.0	18.0	17.1
New York	21.3	19.8	18.6	18.1
Ohio	19.2	18.4	18.2	17.6
Pennsylvania	20.9	20.2	18.3	17.8
OTHER POPULOUS STATES				
California	18.2	17.1	16.8	15.8
Texas	21.4	21.1	19.5	19.4
Florida	22.7	21.7	20.7	19.9
Illinois	22.3	21.4	20.7	20.0
Michigan	20.3	20.1	19.2	18.4
STATES WITH REGIONALIZED NEWBORN CARE				
Arizona	22.0	18.2	18.3	16.4
Massachusetts	18.1	16.4	17.1	17.4
Wisconsin	17.0	16.4	15.7	15.3
UNITED STATES	20.7	19.8	19.2	18.5
SWEDEN				13.0

Modern neonatal and perinatal care of high-risk pregnancies and newborns has become increasingly based upon critical masses of qualified personnel and sophisticated equipment, entailing expense that cannot be mounted or justified in every hospital delivering babies. Hence, regionalized systems of perinatal care are developing. At present, only Arizona, Massachusetts, and Wisconsin have undertaken formal regionalized systems, involving transportation of high-risk mothers and infants to full-range centers capable of the appropriate level of care.

Pennsylvania's recent experience in neonatal mortality suggests that its current record can be considerably improved. During 1970-1972 from 13 to 17 municipalities were above the average for the state and for the U.S. (Appendix A). Although consideration of the problems of urbanization might lead to the expectation that Pittsburgh and Philadelphia should be above the state average, yet Johnstown displayed an even higher neonatal mortality during all 3 years, while Harrisburg, Chester, Norristown, Reading, Easton and Williamsport were higher than the great urban areas in 2 of these 3 recent years for which data is available. Moreover, from 20 to 24 of the state's 67 counties experienced above-average neonatal mortality and many of these counties are of rural or semi-rural nature (Appendix B). Finally, 4 municipalities and 5 counties have shown a steady rise of neonatal mortality in the face of a general decrease. Indeed, some of the figures exceed those of the 3 states (and District of Columbia) with the worst neonatal mortality experience in the nation (Table 5).

Table 5

COMPARATIVE NEONATAL MORTALITY

	1970	1971	1972
Philadelphia	20.4	16.5	15.5
Pittsburgh	19.2	17.4	16.6
Pennsylvania	15.8	14.1	13.7
* District of Columbia	20.3	21.2	18.9
* Mississippi	21.2	19.8	18.3
* North Carolina	18.0	16.5	17.0
* Alabama	18.3	17.6	16.4
Easton	19.2	19.2	25.6
Reading	17.8	17.8	22.0
New Castle	16.2	16.9	21.4
Bethlehem	8.0	11.0	13.1
Greene	18.0	19.9	21.6
Huntingdon	5.5	9.8	18.5
Lycoming	15.1	16.0	17.1
Jefferson	10.0	10.8	16.4
Crawford	8.9	10.8	11.9

From U.S. Dept. HEW Monthly Vital Statistics Report and Pennsylvania Natality and Mortality Statistics

* = approximate figures calculated as state infant mortality x (U.S. neonatal mortality/U.S. infant mortality)

The report which follows contains recommendations from the Committee on Infant Intensive Care (of the Governor's Health Task Force) to the Commonwealth of Pennsylvania which are designed to reverse this unfortunate trend.

RECOMMENDATIONS

RECOMMENDATION #1

a. That "fetal death" be defined and reported as death from any cause occurring in a conceptus of 20 or more weeks gestation or 400 or more grams in weight who is born with no signs of life (heartbeat or spontaneous respiration).

b. That "abortion" be defined and reported as a conceptus expelled or delivered at less than 20 weeks gestation or less than 400 grams in weight.

c. That all abortions, spontaneous or induced, be reported to the Department of Health through hospitals or physician offices without identifying personal data.

RECOMMENDATION #2

a. That the Certificate of Death contain the added question: "If neonatal death, give State_______________ and Municipality_______________ of birth." (Appendix C)

b. That the Certificate of Live Birth be redesigned to conform to the model attached. (Appendix D)

c. That the Certificate of Fetal Death be redesigned to conform to the model attached. (Appendix E)

RECOMMENDATION #3

That all perinatal mortality data be made available through appropriate mechanisms to an Advisory Committee to the Department of Health (see Recommendation #5).

RECOMMENDATION #4

That the Commonwealth of Pennsylvania adopt a new body of Regulations for Obstetric and Newborn Services in approved hospitals. (Appendix G)

RECOMMENDATION #5

a. That the Department of Health appoint a body of technical expertise continually advisory to it in medical matters of improvement and regionalization of perinatal care.

b. That the chief but not exclusive functions of this advisory body shall be:

   1. To review regularly the data and indicate areas for corrective attention.
   2. To visit the sites of proposed and performing obstetric and nursery services on a regular basis.
   3. To review and approve proposals for instituting or modifying perinatal services.
   4. To plan educational programs designed to improve awareness, concern and informed involvement in better perinatal care.
   5. To review and continually update the regulations and guidelines for obstetric and nursery services.

c. That such a Medical Advisory Committee include Pennsylvania members of the following groups who have specific interest or expertise in improving perinatal care:

   1. American Academy of Pediatrics
   2. American College of Osteopathic Pediatrics
   3. American College of Obstetrics and Gynecology
   4. American College of Osteopathic Obstetrics and Gynecology
   5. American Nurses Association

RECOMMENDATION #6

a. That the Department of Health appoint an advisory Maternal and Child Health Council.

b. That this Council educate the professionals and public among its constituents in support of its goals, which are the identification of need and specification of routes for improvement in perinatal care.

c. That this Council be, in addition, specifically charged to recommend to the Department of Health improvements in total reproductive health care for the women of Pennsylvania. This program should encompass public education, interconceptional care and family planning as well as prenatal, perinatal, and postnatal care for mother and child.

d. That this Council include those members of the following groups who have a specific interest in improving perinatal care: physicians, nurses, medical and general educators, the lay public and the General Assembly.

RECOMMENDATION #7

a. That there be instituted throughout the Commonwealth's public system of secondary education a program for awareness and appreciation of problems in perinatal health.

b. That such a program of advocacy emphasize the importance of prenatal care and nutrition, the identification and management of high risk factors, the wisdom of delivery of high risk pregnancies in or related to adequate facilities, and that few problems in human reproduction or the perinatal period need any longer be regarded as unalterable.

RECOMMENDATION #8

a. That, in support of efforts to regionalize newborn intensive care, the Commonwealth of Pennsylvania explore the feasibility of inter-hospital transport of distressed newborns and care teams by the Pennsylvania State Police and the Pennsylvania National Guard.

b. That any such implementation of air (and surface) transportation be coordinated with the recommendations of the Governor's Emergency Task Force.

RECOMMENDATION #9

That legislation be enacted which prohibits the writing of any health insurance policy in Pennsylvania which excludes the unborn or newborn infant.

RECOMMENDATION #10

That the Commissioner of Insurance exert proper authority to:

a. Include in all health insurance policies coverage of ambulance or other transport of newborn infants, where such transport is from hospital to hospital.

b. Foster negotiation of hospital contracts which distinguish and justify intensive care unit costs from those of general hospital beds. These contracts should provide appropriate utilization controls.

c. Foster consideration of reimbursement of physician teams on some basis that is keyed to diagnosis, levels of complications and levels of care, rather than to itemized fees for individual services.

RECOMMENDATION #11

a. That the financial resources of the Department of Health be expanded sufficiently to assure the availability of medical care in approved facilities for uninsured mothers and infants requiring intensive perinatal or neonatal care.

b. That the General Assembly appropriate sufficient funds to discharge this obligation.

> "There is now a danger that neonatal intensive care is becoming overemphasized: it is almost a status symbol for a hospital to have such a unit. The requirements for an effective neonatal intensive care unit, however, are so stringent in terms of access to clinical material, well-trained personnel (medical, nursing, laboratory, and ancillary), space, equipment, and adequate financing, that only a selective development on regional lines is practical or effective in significantly reducing neonatal morbidity and mortality. The best results will be obtained if such development takes place within the context of a comprehensive plan for the delivery of maternal and child health care. This should include public education, interconceptional care, family planning, and prenatal, perinatal, and postnatal care for mother and child."
>
> (P. R. Swyer, 1970)

Introduction

During the last decade an increasing body of evidence has accumulated to demonstrate that, with presently available knowledge and skills, it is possible approximately to halve neonatal mortality by the establishment of neonatal intensive care units (NICU) within hospitals of birth or transportation to such units from hospitals of birth (Swyer, P. R. 1970, Schlesinger, E. R. 1973, Lucey, J. F. 1973).

It has been documented that neonatal mortality as low as 6-7/1000 live births can be achieved in hospitals served by NICU's, given a moderate risk obstetric population, and around 10-12/1000 live births in populations at higher risk (especially those who are economically underprivileged) (Stein, A. M. et al 1973). Thus, degree of obstetric risk is the prime determinant in neonatal mortality experience, more so than affiliation of the hospital concerned or size of the annual population delivered (Tokuhata, G. K. et al 1973). Yet, even the very occasional high risk infant born in a small

obstetrical unit serving a low risk obstetric population receives better care if such a unit has ready access to a NICU. Since overall neonatal mortality in the Commonwealth of Pennsylvania stands at 14-16/1000 (range from 7-24/1000), there is clearly considerable room for the sort of improvement that has been demonstrated elsewhere (e.g., Alabama, Arizona, California, Maryland, Ontario, Quebec, Tennessee, Wisconsin) (Schlesinger, E. R. 1973).

Because of the high costs of establishing and maintaining such NICU's the question of "cost-effectiveness" is frequently raised. The answer lies in the fact that neonatal survivals from prematurity, hyaline membrane disease, etc. are, after treatment in first-class NICU's, increasingly attended by "quality" survival where intact intelligence is indistinguishable from that of other family members. This recent experience is contrasted with the former one of frequent chronic institutionalization for mentally retarded or blinded survivors. In the current economic climate one must consider, then, the relative cost-benefits of an approximate 20-day hospital stay receiving intensive care (about $2000-3000) versus a life-time institutional stay receiving custodial care (about $200,000-$300,000), whose cost is most usually borne by the state (Stein, A. M. et al 1973).

* * * * *

The Infant Intensive Care Task Force was assembled to "bring before the Governor's Health Task Force the information and recommendations necessary to create and implement state government policies toward improving the care obstetrical unit servicing a low risk obstetric population, neonatal [illegible] care of such a unit [illegible] NICU. [illegible] mortality in the [illegible] (range from 7-35/1000 [illegible] of improvement [illegible] Arizona, California, [illegible] (Schlesinger, 1973).

Because of [illegible] NICU's the question [illegible] answer [illegible] membrane disease [illegible] increasingly [illegible] is indistinguishable [illegible] experience is [illegible] alization for [illegible] climate [illegible] 20-day neonatal [illegible] life-time [illegible] $300,000), [illegible] al 1973).

The Infant Intensive Care Task Force was [illegible] Governor's Health Task Force [illegible] to create and implement state government policy [illegible] of newborn infants." We have espoused the concept of regionalization of neonatal-perinatal health services and have adopted as a general strategic theme certain aspects of programs found to be successful in other states -- key elements are: 1. a reliable data base concerning perinatal mortality and bed utilization; 2. the development of a comprehensive plan based on such data; 3. the enlistment of respected professional support for the plan; 4. the education of health care providers <u>and</u> consumers to accept, support, implement, modify and improve the plan; 5. use of the several regulatory authorities of the state to provide financial inducements or legal enforcements to uphold the plan where the preceding measures have been unsuccessful.

Strategy

> "Thus the options are (1) concentrate all deliveries in large regional centres housing full neonatal facilities, including an NICU, and obstetric services; (2) provide a similar centre for high risk pregnancies only, and organize a transportation and consultation service for the 40 per cent or so of perinatal problems that cannot be identified before birth; or (3) plan for a regional neonatal referral unit, preferably in association with a children's hospital, centrally placed to serve a number of obstetric units.
>
> Each of these options has its own merits and disadvantages. The choice will be determined by the special circumstances obtaining in the region. The decision should be based on (1) the demography and geography of the region; (2) the local attitudes, needs, and understanding of administrators and staffs of the hospitals; (3) intensive investigation of comparative perinatal statistics in each hospital in the region; and (4) presentation of a written report of such investigations and data supporting specific recommendations; medical staffs, administrators, and the public should be provided with an over-all plan."
>
> (P. R. Swyer, 1970)

Our version of these suggestions has been embodied in a previous interim report as follows:

1. Identification of high risk areas and hospitals (of birth).
2. Identification of existing and encouragement for formation of critical masses of personnel qualified to deal with the risk population at hand.
3. Placement of such critical masses in areas of high risk or transshipment of the high risk population to such centers.
4. Presentation to hospitals and their staffs of relatively limited choices for development of their obstetric or nursery services, with preservation of the right to choose their own course of development through self-establishment and maintenance of monitored standards of excellence at the level chosen.
5. Establishment of educational, financial and (rarely) legal inducements to achieve these goals.
6. Education of both the medical and lay publics to the modern concept of expectation of quality survival for all infants.

Tactics

Data Base

While the long-range goal is the reduction of morbidity and the

simultaneous provision of contributing citizens rather than social burdens, the immediate priority is the reduction of fetal and neonatal (i.e., perinatal) mortality. The reporting base is already at hand in Pennsylvania, but needs improvement. The key mechanism is the matching of birth certificates with certificates of fetal and neonatal death, so as to identify geographic and demographic populations (and hospitals) at high risk. Through such reporting mechanisms, properly programmed, it also is or becomes possible to match census tract (or township) of origin with hospital utilization and to analyze (and, perhaps, later modify) hospital useage. More accurate and effective reporting, as well as comparison of data, will result from uniform criteria for reporting.

RECOMMENDATION #1

a. That "fetal death" be defined and reported as death from any cause occurring in a conceptus of 20 or more weeks gestation or 400 or more grams in weight who is born with no signs of life (heartbeat or spontaneous respiration).
b. That "abortion" be defined and reported as a conceptus expelled or delivered at less than 20 weeks gestation or less than 400 grams in weight.
c. That all abortions, spontaneous or induced, be reported to the Department of Health through hospitals or physician offices without identifying personal data.

Our inspection of the current reporting forms ("Certificate of Live Birth", "Certificate of Fetal Death", "Certificate of Death") leads us to suggest improvements designed to: 1. trace Pennsylvania neonatal deaths back to the hospital of birth, in or out-of-state; 2. gain information of considerable help in health planning at little or no cost in terms of privacy.

RECOMMENDATION #2

a. That the Certificate of Death contain the added question: "If neonatal death, give State_______________and Municipality _______________of birth." (Appendix C)
b. That the Certificate of Live Birth be redesigned to conform to the model attached. (Appendix D)
c. That the Certificate of Fetal Death be redesigned to conform to the model attached. (Appendix E)

The Bureau of Vital Statistics is now the collector and custodian of all data so reported and the Bureau exchanges similar data concerning Pennsylvania infants born in or dying in neighboring states. Further, the Department of Health annually reports to each hospital of birth its own fetal, neonatal and perinatal mortality experience, together with appropriate normative data for the region and the Commonwealth. For purposes of such mortality reporting, all neonatal deaths are attributed to hospital of birth, regardless of the actual hospital or other locale of death.

RECOMMENDATION #3

That all such perinatal mortality data be made available through appropriate mechanisms to an Advisory Committee to the Department of Health (see Recommendation #5).

Identification and Encouragement of Critical Masses

Most authoritative groups considering regionalization of newborn care have called for the establishment of (as, in fact, already occur) three types of nurseries, each with fairly well-defined responsibilities. Typical of such prescriptions is that which follows:

> "A regional obstetric-neonatal centre
> - Staffed by specialist obstetricians and neonatologists
> - Containing equipment for monitoring both mother and foetus during labor
> - A specialized neonatal resuscitation and intensive care unit should be close to the delivery suites
> - A full range of consultant specialists in paediatrics and surgery should be available
> - When possible the NICU should be in a university centre with postgraduate teaching and research facilities
>
> Community hospitals
> - Close affiliation with the regional centre
> - Primary responsibility for delivery of women whose pregnancies appear normal
> - Equipped and staffed to deal with emergencies in both mother and baby
> - Able to call on consultants from the regional centre
> - Nursery should be in charge of a part-time neonatologist who could deal with less complicated neonatal problems, such as moderate prematurity and erythroblastosis foetalis
>
> District hospitals
> - Probably justifiable only where geographic features (terrain or climate) make access to larger centres difficult
> - Nursery equipped and staffed to care only for normal infants, with those who become ill referred to larger hospitals"
>
> (P. R. Swyer, 1970)

This quoted outline immediately suggests areas and styles in which critical masses of qualified health professionals have or might congregate, depending on demographic and geographic features. The size and diversity of the Commonwealth in these regards further suggests that no single sort of aggregation of personnel will be practical or satisfactory in all locales.

As a relatively large state containing both large urban and large rural or semi-rural populations, Pennsylvania already contains nurseries of all 3 types -- regional obstetric-neonatal centers (Level III or "transfer" facility), community hospitals (Level II or "special care" nursery), district hospitals (Level I or "well-baby" nursery).

While some data can indicate that obstetrical services delivering less than 500 babies annually tend to have the highest perinatal (i.e., fetal and neonatal) mortality, this has not proven true in Pennsylvania (Tokuhata, G. K. et al, 1973). Rather, the degree of obstetric risk in the population served is the apparent critical factor. Moreover, some small obstetric services may occur in hospitals which, for various reasons, may happen to have a wide and deep range of obstetric and pediatric talent available among the medical staff. Finally, the more or less arbitrary closing by Departments of Health of all small obstetrical services (an approach used with effect in some smaller states) will probably prove unacceptable in Pennsylvania, most particularly in those widely dispersed rural areas which can only support small "district" hospitals.

It is equally clear that, in Pennsylvania as elsewhere, the vast bulk of deliveries occur at community (Level II) hospitals, but only rarely do such hospitals achieve a critical perinatal mass by delivering 2000-3000 or more women per year. This results from a historical fractionation of obstetrical and pediatric services (despite chronic occupancy problems) among 2 or 3 neighboring hospitals in many small cities and metropolitan areas. Such fragmentation has apparently resulted in part from the long tradition of "rotating" internships at such hospitals, whose approval for training rested upon the existence of a full range of patient services. As that era draws to a close and cost/benefit analyses creep into hospital administration, a degree of sympathy for consolidation of maternity and pediatric services in only one area hospital is detectable in many communities.

On the other hand, in large urban areas of long medical standing it is quite common to find superb obstetrical and pediatric services totally

divorced from each other. Rather, they are in the form of free-standing "specialty" (children's and maternity) hospitals. Usually, however, there are long-established arrangements between the two to effect the necessary full-scale coverage. Perinatal (but non-surgical) expertise is most frequently assembled in the maternity hospitals which often lack "surgical" support services (full-scale radiology, clinical pathology, respiratory therapy, etc.).

An informal and self-descriptive survey of hospital obstetrical and nursery services in Pennsylvania (Appendix F) hints at a fortunate dispersion of talent and equipment suited to the needs of the stressed newborn infant. Clearly, however, such a survey requires on-site confirmation by qualified observers and comparison of claimed facilities with documented perinatal mortality outcomes.

Since it would appear wasteful to attempt dismantling and rebuilding what in many cases already works well, if not optimally, the Committee has opted for an approach designed to encourage further development towards consolidation of critical masses along natural lines and towards dismantling or remodeling of non-critical masses of qualified personnel by demanding a level of performance unlikely to be achieved without real commitment to excellence.

RECOMMENDATION #4

That the Commonwealth of Pennsylvania adopt a new body of Regulations for Obstetric and Newborn Services in approved hospitals.

The recommended regulations and guidelines are attached (Appendix G) and have been adapted to the perceived needs of Pennsylvania from the plan successfully employed in Massachusetts. Their intent may briefly be summarized as:

1. All hospitals delivering babies are required to appoint a Chief of Obstetrics and a Chief of Nursery Services who will be, where possible, board-certified to the specialty and, along with their respective hospital committees, will decide matters of policy pertaining to the obstetric and nursery services. These policies are subject to review by the Department of Health. Exceptions to the board-certification requirement must be justified to the Department of Health.
2. Three types of nursery services are delineated -- well-baby, special care, and "transfer" nurseries. A transfer nursery is a special care nursery which is approved (on basis of services available and geographic or other need) by the Department of Health to accept distressed infants in transfer from other hospitals.
3. Hospitals delivering less than 1500 babies or having an average daily census of less than 4 low birthweight infants are strongly encouraged to refer distressed babies to transfer nurseries. Hospitals with larger obstetrical services are required to establish special care nurseries or to develop acceptable written plans for transferring distressed newborns. It is felt that this might encourage amalgamation of obstetrical and nursery services in the smaller cities, urban and suburban areas where most obstetricians and pediatricians now practice.

The recommended regulations [illegible] and have been adopted by the [illegible] plan successfully [illegible] be summarized as:

1. All hospitals [illegible] a [illegible] cost [illegible] and [illegible] design [illegible] outpatient [illegible] the Department [illegible] requirements [illegible]
2. Three types [illegible] special [illegible] a special [illegible] services and [illegible] qualify [illegible] hospitals.
3. Based [illegible] bring [illegible] necessary [illegible] hospitals [illegible] specialized [illegible] all [illegible] with [illegible] the necessary services to the [illegible] areas where [illegible]

4. Requirements for staffing and laboratory support of well-baby nurseries are, it is hoped, sufficiently stringent to encourage the voluntary closing down of marginal obstetrical services.

Implementation

Whether the Department of Health should wish to "anoint" existing groupings as well-baby, special care, or transfer nurseries or (perhaps much more productively) put out "requests for proposals" of truly imaginative, sensible and efficient groupings (under the financial inducement of appropriately-keyed carrier reimbursement), the Department will clearly require the continuing expertise of a multidisciplinary medical scientific advisory body. Such a group, with appropriate ad hoc consultants, should help guide the Department in "peer review" selection among competing proposals, perform on site review of all levels of care, and continually modify and improve guidelines for implementation of the suggested Regulations towards the goal of the optimum achievable.

RECOMMENDATION #5

a. That the Department of Health appoint a body of technical expertise continually advisory to it in medical matters of improvement and regionalization of perinatal care.
b. That the chief but not exclusive functions of this advisory body shall be:
   1. To review regularly the data base and indicate areas for corrective attention.
   2. To visit the sites of proposed and performing obstetric and nursery services on a regular basis.
   3. To review and approve proposals for instituting or modifying perinatal services.

    4. To plan educational programs designed to improve awareness, concern and informed involvement in better perinatal care.
    5. To review and continually update the regulations and guidelines for obstetric and nusery services.

c. That such a Medical Advisory Committee include Pennsylvania members of the following groups who have specific interest or expertise in improving perinatal care:
    1. American Academy of Pediatrics
    2. American College of Osteopathic Pediatrics
    3. American College of Obstetrics and Gynecology
    4. American College of Osteopathic Obstetrics and Gynecology
    5, American Nurses Association

In furthering the mission of regionalization of perinatal care the Department and its medical advisory body should make the effort to group well-baby and special care nurseries in reasonable geographic relation to regional transfer nurseries. The transfer nursery assigned to a given region should be charged with and accept the educational responsibility for its region and, as a result, it should accept the ultimate responsibility for all perinatal deaths among hospitals of birth in the region, whether or no it received such infants in transfer. There should be no implication that "assignment" of a given well-baby or special care nursery to the regional transfer nursery necessarily demands that all transferrable infants be referred exclusively to that transfer nursery. (There may well be compelling reasons for referral to an out-of-region transfer nursery.)

Throughout all of these activities the Department and its advisory group should aim for achievement of minimal standards through regulation and of optimal standards through education, promotion and demonstration.

Education

The Committee recognizes that none of the above-recommended efforts are likely to be permanently successful without a preceding and concomitant effort to educate the lay public to expect and demand improved perinatal care and the health professionals concerned how to deliver it. Regarding professional education, the most successful plans have centered, again, around regional efforts wherein the regional transfer nursery assumes educational responsibility for all obstetric and nursery services in its assigned network. The practicable educational (and patient transport) radius appears to be of the order of 2 hours (one way) surface travel.

A sensible plan for such a professional educational plan would appear to be as follows:

1. Identify those hospitals in the region delivering babies
    a. Focus on those with problems
    b. Focus on those with problems which are nearest to the "Medical Center" acting as an educational resource
2. A self-evaluation is performed by those hospitals identified above, these hospitals being asked whether they would elect to participate in an educational program
3. To those hospitals electing to participate, an educational team is sent which then works with the local staff (principally nurses but also any willing and interested physicians)
    a. The educational team visits the hospital and there
    b. Reviews the above self-evaluation with local personnel
    c. The educational team observes and confirms those features accented through the above questionnaire

d. The educational team and local hospital staff _together_ plan a custom-tailored training program designed to reinforce local strengths and to eliminate local weaknesses

4. The training program, thus designed, is launched:
    a. The local hospital staff spends three to four days at the regional resource center observing and practicing those features previously identified as in need of emphasis. After a suitable interval for assimilation in the institution of this new learning, then
    b. The regional center educational staff spends a similar three to four day period of time in the local hospital evaluating the status of achievement of the above - stated objectives.

Thereafter, at regular and approximately bimonthly group meetings of the regional and local hospital staffs, regular discussions of problems, solutions and gains are held. This procedure is abetted by regular reobservation, re-evaluation, and reinstruction (to take care of normal personnel turnover) of nurses in the local hospital. Finally, the regional educational resource facility _must_ always be available on site or by the telephone for consultation.

* * * * *

Education, promotion and demonstration of optimal standards for perinatal care will require the participation of and support from many groups, particularly the public at large and its elected representatives.

RECOMMENDATION #6

a. That the Department of Health appoint an advisory Maternal and Child Health Council.

b. That this Council educate the professionals and public among its constituents in support of its goals, which are the identification of need and specification of routes for improvement in perinatal care.

c. That this Council be, in addition, specifically charged to recommend to the Department of Health improvements in total reproductive health care for the women of Pennsylvania. This program should encompass public education, interconceptional care and family planning as well as prenatal, perinatal, and postnatal care for mother and child.

d. That this Council include those members of the following groups who have a specific interest in improving perinatal care: physicians, nurses, medical and general educators, the lay public and the General Assembly.

Public education will be instrumental also in improving the expectations of society concerning perinatal care. In addition to an intelligent program of media coverage, the Committee feels that the successful example of secondary school "driver education" should be emulated.

RECOMMENDATION #7

a. That there be instituted throughout the public system of secondary education a program for awareness and appreciation of problems in perinatal health.

b. That such a program emphasize the importance of prenatal care and nutrition, the identification and management of high risk factors, the wisdom of delivery of high risk pregnancies in or related to adequate facilities, and that few problems in human reproduction or the perinatal period need any longer be regarded as unalterable.

Transportation

Any program involving regionalization of care must necessarily also involve transportation. While the ideal transport vehicle for the at-risk unborn is the uterus of its mother, the fact is that only approximately 1/2 of perinatal problems are identifiable in advance of labor and delivery. This fact, coupled with the wide dispersion of at least rural populations and the impossibility of widespread availability of transfer nurseries, will continue to require the establishment of effective systems for transportation. These, most would agree, are most effectively operated under the aegis of the regional transfer nursery. In this mode skilled personnel are dispatched to the referring hospital nursery service first to stabilize and then to transport the affected infant. This process alone can be a very effective educational tool and frequently serves to initiate or reinforce the professional educational system outlined above.

Surface and air transport have both been effectively employed, but the experience of most indicates that surface transport is vastly to be preferred when transport radius is less than 50-75 miles. Moreover, their current operational status (equipment, personnel and their distribution) appears largely to preclude wide use of State Police or National Guard aircraft in the Commonwealth. The State Police are limited to only 5 helicopters which are not ideally suited to infant or other patient transport and their current primary mission is that of traffic control and regular police work. National Guard helicopters are soon to be concentrated entirely in the central portion of the state, where distance and time will render them essentially useless to the larger population centers on the eastern and western borders. Moreover, current legal restraints

upon National Guard involvement in civilian missions apparently render the individual pilot personally liable for any untoward event sustained during the mission.

RECOMMENDATION #8

a. That, in support of efforts to regionalize newborn intensive care, the Commonwealth of Pennsylvania explore the feasibility of inter-hospital transport of newborns and care teams by the Pennsylvania State Police and the Pennsylvania National Guard.
b. That any such implementation of air (and surface) transportation be coordinated with the recommendations of the Governor's Emergency Task Force.

Despite the current lack of a coordinated emergency transport system, various informal arrangements for surface or air transport have evolved in Pennsylvania. These systems appear to be working passably well, save for the problem of recovery of costs. Few insurance carriers currently honor such a patient expense, hospitals will not absorb them (at average charges of $1.50 per mile round trip) and consumers expect either party to have covered the cost of transportation. Consequently, ambulance and other companies (frequently volunteer) are experiencing difficulty in recovering costs for trips which are often beyond their own districts. Recommendations for solution of this problem are listed in the following section on financing.

Finance

Costs can be grouped under the headings of research, service and education. Research *per se* is not a consideration in the charge before

this Committee and is, therefore, dismissed.

The principle focus of this report is upon optimum levels of quality service to the distressed or at-risk newborn and unborn, as well as upon education of the public to support and of the professions to provide such services. Several market forces, however, currently mitigate strongly against these services being successfully mounted:

1. The goods and services required (complicated life-support systems, high nursing/patient ratios, high laboratory and x-ray costs, large teams of professionals, long hospital stays) are extremely expensive. Illnesses, therefore, are often in the "catastrophic" category.
2. There is a strong predilection for premature delivery of newborns among the economically underprivileged, many of whom are non- or under-insured. Underinsurance, however, may affect all economic classes:
    a. Commercial insurance policies frequently and specifically exclude coverage of the first 14 days of life.
    b. Blue Cross reimburses hospitals on a contractual basis. Such contracts apparently often fail to cover the $100-200 per day of actual hospital costs (which are covered by Medicaid). Blue Cross does not reimburse physicians.
    c. Blue Shield and Medicaid do reimburse physician's services, but at limits which financially penalize those attempting to render quality care in complicated illnesses over prolonged periods of time -- reimbursements of $200 maximum over a 6-12 week hospitalization simply cannot attract much interest in the private sector for provision of these services.

In considering these problems and their possible solutions, the Committee became convinced that, if the newborn or unborn infants (sick or well) of all health consumers become accepted as bona fide patients and if their costs of care are competitively recompensed to all health care providers through self-pay or some appropriate insurance mechanism (such as "catastrophic"), then virtually all care-oriented necessary goods and services (construction, equipment, personnel, transportation) should become essentially self-amortizing.

Legislation has been passed by the following states which prohibits the writing of health insurance policies excluding the newborn: California, Florida, Louisiana, Montana, Texas and Wisconsin. Similar legislation is pending in Arizona, District of Columbia, Georgia, Maryland, Missouri, North Carolina, New York, Ohio, Virginia and Washington. The status of such legislation designed to protect the newborn infants of Pennsylvania is, however, uncertain.

RECOMMENDATION #9

That legislation be enacted which prohibits the writing of any health insurance policy in Pennsylvania which excludes the unborn or newborn infant.

RECOMMENDATION #10

That the Commissioner of Insurance exert proper authority to:

a. Include in all health insurance policies coverage of ambulance or other transport of newborn infants, where such transport is from hospital to hospital.

b. Foster negotiation of hospital contracts which distinguish and justify intensive care unit costs from those of general hospital beds. These contracts should provide appropriate utilization controls.

c. Foster consideration of reimbursement of physician teams on some basis that is keyed to diagnosis, levels of complications and levels of care, rather than to itemized fees for individual services.

Under Recommendations 10-b and 10-c (above) it could become possible for the Department of Health further to encourage or discourage development of perinatal services in various areas of need or surplus.

Through these mechanisms, the Committee believes a financial structure can be built to undergird foreseeable efforts towards regionalization of perinatal care. Financial gaps will undoubtedly develop during implementation of programs, but many of these can, perhaps, be covered through controlled supplementation by Federal and State funds under control of the Department of Health.

RECOMMENDATION #11

a. That the financial resources of the Department of Health be expanded sufficiently to assure the availability of medical care in approved facilities for uninsured mothers and infants requiring intensive perinatal or neonatal care.
b. That the General Assembly appropriate sufficient funds to discharge this obligation.

Thus, it appears possible (if not likely) that the chief continuing budgetary commitment for the Commonwealth from its own resources may be for the establishment and maintenance of the educational programs previously outlined.

The Committee feels it inappropriate at present to produce specific budgetary recommendations, since these should be keyed to a specific plan for regionalization of care and this plan must rest on the data base to be developed.

Summary

These recommendations, once acted upon, will merely set up the conditions under which a formal plan for regionalization may be conceived and implemented. Such a plan will, based upon experience in other states, require 3-5 years for full realization and fruition. It will, further, doubtless require continual surveillance, evaluation and modification.

The Committee is totally aware of a major omission in this report and recommendations. That is, the statement that the major route for improvement in perinatal mortality will be through a total effort directed at "interconceptional care, family planning, and prenatal, perinatal and postnatal care for mother and child." While it is true that a first effort at improved neonatal care has proven a useful initial entree into total reproductive care, we feel that a broad-scale effort is more likely to produce lasting improvement in morbidity and mortality. We feel that consideration of such a broad approach is beyond the present charge, expertise and time available to this Committee, but should become a principal charge of a Maternal and Child Health Council of the Department of Health. (Recommendation #6)

CONCLUSION

> Every wanted baby can now be expected to live a productive life. We need no longer have a Spartan resignation to the belief that some are unfit and best left to die. Most advances in perinatal care over the centuries have shifted dead mothers and infants from the category of "unfit" to that of "unfortunate".

REFERENCES

Lucey, J. F. Why We Should Regionalize Perinatal Care. Pediatrics 52:488-491, 1973

Schlesinger, E. R. Neonatal Intensive Care: Planning for Services and Outcomes Following Care. Journal of Pediatrics 82:916-920, 1973

Stein, A. M., Kreick, M. E., Quillin, M. L. Cost-Effectiveness of Perinatal Centers. Paper presented at the Annual Convention, American Public Health Association in San Francisco, November 1973

Swyer, P. R. The Regional Organization of Special Care for the Neonate. Pediatric Clinics of North America 17:761-776, 1970

Tokuhata, G. K., Colflesh, V. G., Ramaswamy, K., Mann, L. A., Digon, E. Hospital and Related Characteristics Associated with Perinatal Mortality. American Journal of Public Health 63:227-237, 1973

BIBLIOGRAPHY

Standards and Recommendations for Hospital Care of Newborn Infants (5th Edition - 1971)

American Academy of Pediatrics
Committee on Fetus and Newborn
P. O. Box 1034
Evanston, Illinois 60204

Hospital Nurseries and Newborn Infant Care Services: Minimal Criteria and Guidelines (1972)

Michigan Department of Public Health
Bureau of Health Facilities
Lansing, Michigan 48914

Manual for the Transport of High-Risk Newborn Infants: Principles, Policies, Equipment, Techniques (1972)

The Canadian Paediatric Society
The Foetus and Newborn Committee

NEONATAL MORTALITY (CITY)

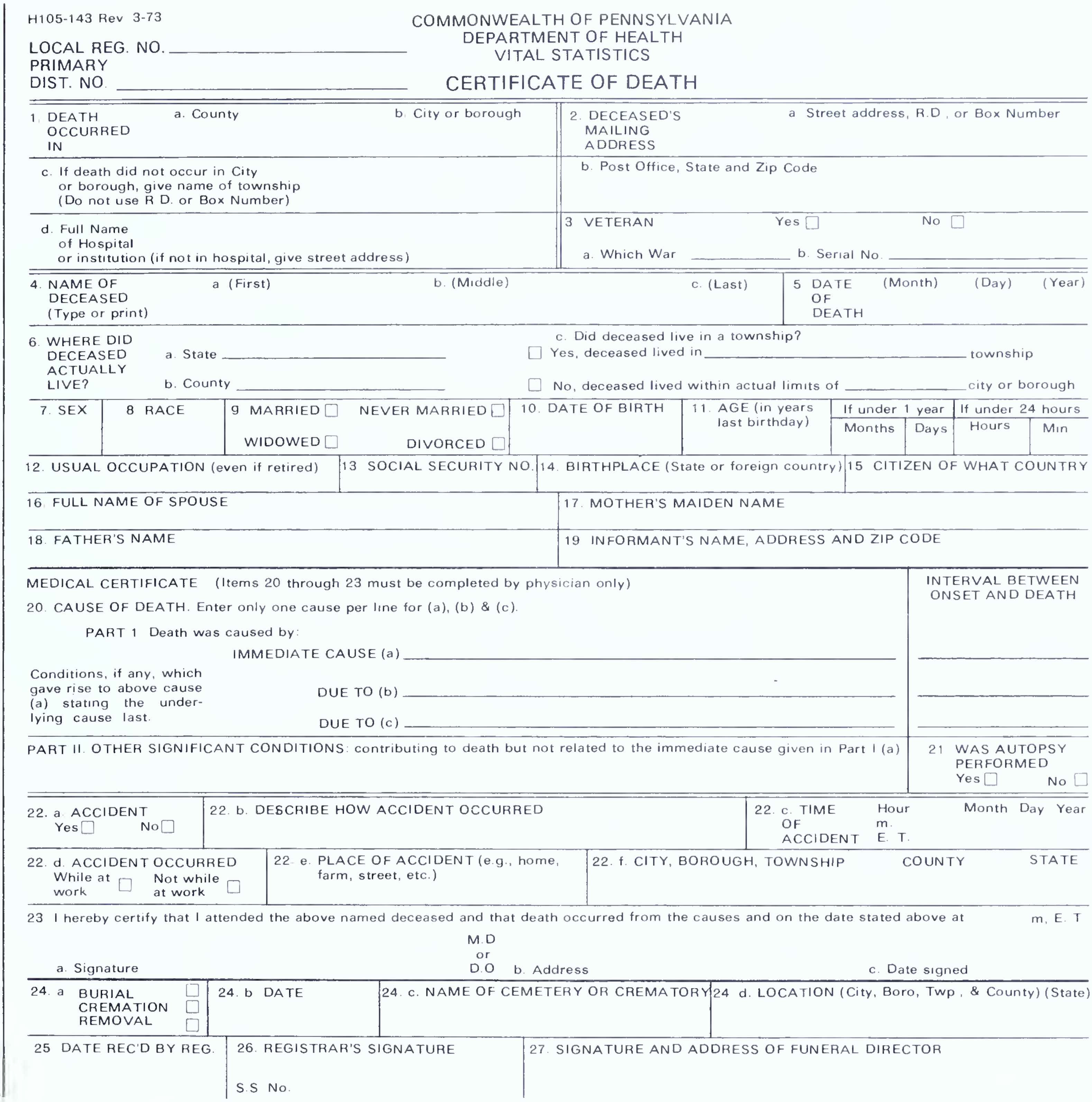
RANK	1970		1971		1972	
1	26.5	Harrisburg	25.5	Johnstown	25.6	Easton
2	22.8	Chester	21.6	Lebanon	22.8	Johnstown
3	22.7	Allentown	20.8	Scranton	22.0	Reading
4	21.2	Johnstown	20.0	Wilkinsburg	21.7	Norristown
5	21.2	Norristown	19.2	Easton	21.4	New Castle
6	20.4	Philadelphia	18.3	Wilkes-Barre	20.2	Lancaster
7	19.2	Pittsburgh	17.8	Reading	19.0	Chester
8	19.2	Easton	17.7	York	18.4	Harrisburg
9	18.9	Altoona	17.6	Williamsport	17.3	Williamsport
10	17.8	Reading	17.4	Pittsburgh	16.6	Pittsburgh
11	17.7	York	17.3	Altoona	16.0	Erie
12	17.0	Erie	16.9	New Castle	15.5	Philadelphia
13	16.2	New Castle	16.5	Philadelphia	15.1	Wilkinsburg
14	15.8	PENNSYLVANIA	16.4	Erie	14.6	York
15	15.3	Lancaster	16.2	Harrisburg	14.5	Wilkes-Barre
16	14.9	U.S.A.	15.8	Chester	14.1	Allentown
17	14.5	Wilkes-Barre	14.7	Norristown	13.8	Lebanon
18	14.5	Wilkinsburg	14.4	McKeesport	13.7	PENNSYLVANIA
19	14.0	Lebanon	14.3	U.S.A.	13.7	U.S.A.
20	12.0	Scranton	14.1	PENNSYLVANIA	12.5	McKeesport
21	11.0	Williamsport	13.4	Allentown	11.8	Altoona
22	10.8	McKeesport	10.1	Lancaster	8.6	Scranton

(Cities with more than 500 annual live births)

NEONATAL MORTALITY (COUNTY)

RANK	1970		1971		1972	
1	23.7	Susquehanna	21.5	Venango	21.6	Greene
2	23.4	Bedford	19.9	Greene	21.4	Susquehanna
3	21.9	Venango	19.2	Blair	18.3	Clinton
4	21.9	Bradford	19.2	Columbia	17.7	Columbia
5	19.9	Schuylkill	18.7	Clearfield	17.1	Lycoming
6	19.5	Mercer	18.4	Franklin	16.0	Erie
7	19.5	Tioga	17.8	Fayette	15.9	Washington
8	19.4	Clinton	17.8	Clarion	15.9	Bradford
9	19.3	Armstrong	17.4	Beaver	15.8	Clearfield
10	19.3	Columbia	16.6	Monroe	15.8	Bedford
11	19.1	Lehigh	16.0	Lycoming	15.7	Cambria
12	18.9	Indiana	15.2	Luzerne	15.3	Schuylkill
13	18.0	Greene	15.2	Lackawanna	15.2	Beaver
14	17.7	Clearfield	14.9	Clinton	14.9	Delaware
15	17.3	Erie	14.8	Northampton	14.5	Allegheny
16	17.0	Fayette	14.8	Schuylkill	14.2	Luzerne
17	16.7	Somerset	14.7	Cambria	14.2	Dauphin
18	16.3	Beaver	14.7	Somerset	13.9	Montgomery
19	16.3	Lawrence	14.7	Tioga	13.9	Lawrence
20	16.2	Dauphin	14.6	Erie	13.9	Monroe
21	16.2	Washington	14.5	Montgomery	13.7	PENNSYLVANIA
22	16.1	Westmoreland	14.4	Dauphin	13.6	Northampton
23	15.8	Cambria	14.1	Washington	13.1	Somerset
24	15.8	PENNSYLVANIA	14.1	PENNSYLVANIA	13.1	Mifflin
25	15.4	Northumberland	14.0	Mifflin	13.0	Lehigh
26	15.3	Luzerne	13.8	Bradford	12.3	Blair
27	15.1	Allegheny	13.6	Allegheny	12.1	Fayette
28	15.1	Delaware	13.3	Armstrong	12.1	Mercer
29	15.1	Lycoming	12.9	Indiana	12.1	Clarion
30	14.4	Blair	12.6	Bedford	11.9	Westmoreland
31	13.9	Montgomery	12.0	Mercer	10.1	Armstrong
32	13.4	Lackawanna	12.0	Susquehanna	10.1	Venango
33	12.6	Mifflin	11.9	Delaware	9.7	Franklin
34	11.6	Clarion	11.9	Westmoreland	7.3	Tioga
35	11.1	Northampton	11.7	Lawrence	6.8	Lackawanna
36	9.7	Monroe	10.8	Northumberland	6.5	Northumberland
37	8.8	Franklin	10.5	Lehigh	6.5	Indiana

(Counties with more than 500 annual live births)



H105-143 Rev 3-73

LOCAL REG. NO. ____________

PRIMARY
DIST. NO. ____________

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HEALTH
VITAL STATISTICS

CERTIFICATE OF DEATH

1. DEATH OCCURRED IN — a. County — b. City or borough	2. DECEASED'S MAILING ADDRESS — a Street address, R.D , or Box Number	
c. If death did not occur in City or borough, give name of township (Do not use R D. or Box Number)	b. Post Office, State and Zip Code	
d. Full Name of Hospital or institution (if not in hospital, give street address)	3 VETERAN Yes ☐ No ☐ a. Which War ______ b. Serial No. ______	

4. NAME OF DECEASED (Type or print) — a (First) — b. (Middle) — c. (Last)	5 DATE OF DEATH (Month) (Day) (Year)

6. WHERE DID DECEASED ACTUALLY LIVE? a. State ____________ b. County ____________

c. Did deceased live in a township?
☐ Yes, deceased lived in ____________ township
☐ No, deceased lived within actual limits of ____________ city or borough

7. SEX	8 RACE	9 MARRIED ☐ NEVER MARRIED ☐ WIDOWED ☐ DIVORCED ☐	10. DATE OF BIRTH	11. AGE (in years last birthday)	If under 1 year		If under 24 hours	
					Months	Days	Hours	Min

12. USUAL OCCUPATION (even if retired)	13 SOCIAL SECURITY NO.	14. BIRTHPLACE (State or foreign country)	15 CITIZEN OF WHAT COUNTRY

16. FULL NAME OF SPOUSE	17. MOTHER'S MAIDEN NAME
18. FATHER'S NAME	19 INFORMANT'S NAME, ADDRESS AND ZIP CODE

MEDICAL CERTIFICATE (Items 20 through 23 must be completed by physician only)

20. CAUSE OF DEATH. Enter only one cause per line for (a), (b) & (c).

PART 1 Death was caused by:

IMMEDIATE CAUSE (a) ____________

Conditions, if any, which gave rise to above cause (a) stating the underlying cause last.

DUE TO (b) ____________

DUE TO (c) ____________

INTERVAL BETWEEN ONSET AND DEATH

PART II. OTHER SIGNIFICANT CONDITIONS: contributing to death but not related to the immediate cause given in Part I (a)

21 WAS AUTOPSY PERFORMED Yes ☐ No ☐

22. a ACCIDENT Yes ☐ No ☐	22. b. DESCRIBE HOW ACCIDENT OCCURRED	22. c. TIME OF ACCIDENT Hour m. E. T. Month Day Year
22. d. ACCIDENT OCCURRED While at work ☐ Not while at work ☐	22. e. PLACE OF ACCIDENT (e.g., home, farm, street, etc.)	22. f. CITY, BOROUGH, TOWNSHIP COUNTY STATE

23 I hereby certify that I attended the above named deceased and that death occurred from the causes and on the date stated above at m, E. T

a. Signature M.D or D.O b. Address c. Date signed

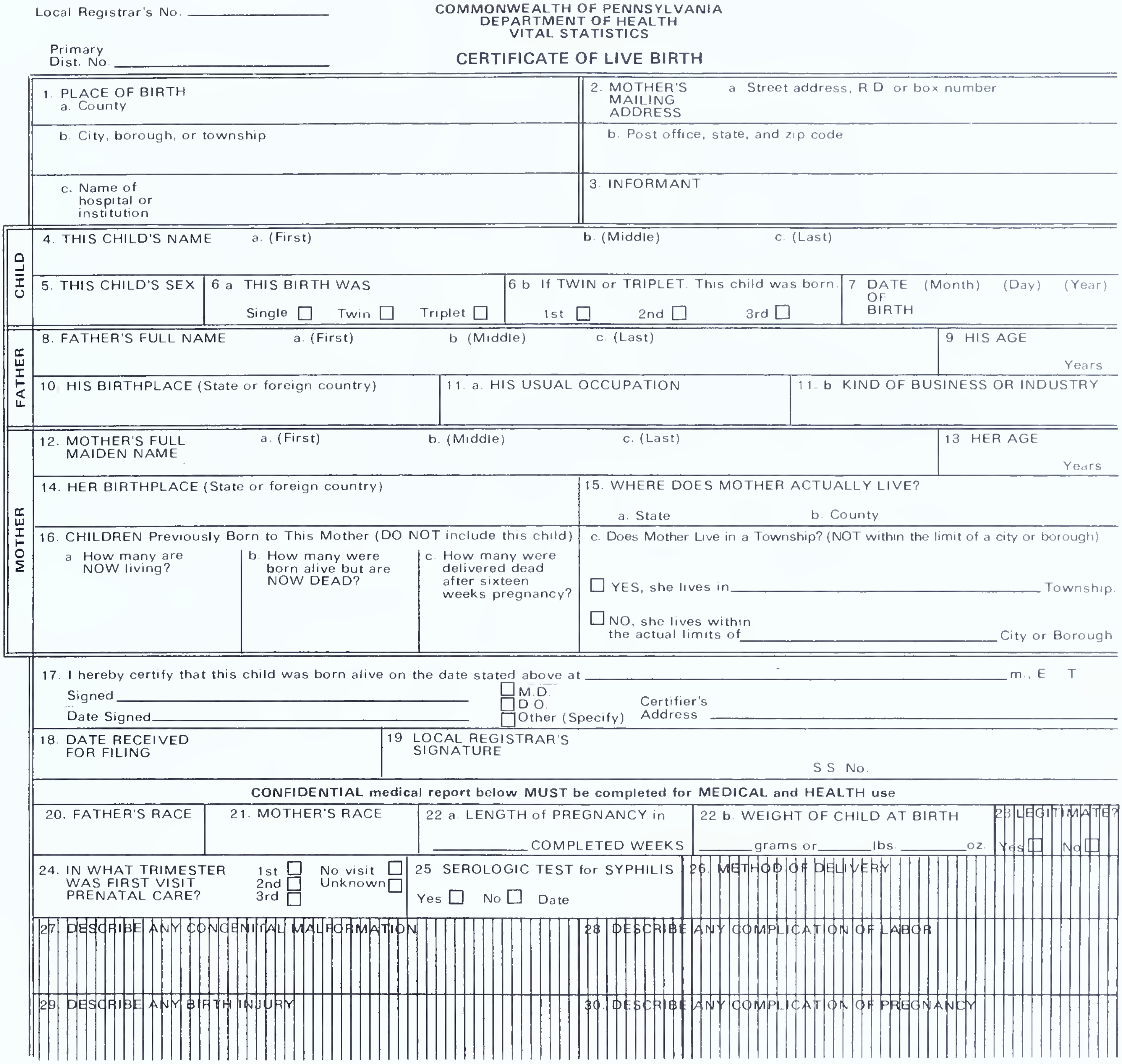
24. a BURIAL ☐ CREMATION ☐ REMOVAL ☐	24. b DATE	24. c. NAME OF CEMETERY OR CREMATORY	24 d. LOCATION (City, Boro, Twp , & County) (State)

25 DATE REC'D BY REG.	26. REGISTRAR'S SIGNATURE S.S No.	27. SIGNATURE AND ADDRESS OF FUNERAL DIRECTOR

(H105 Rev. 3-73)

SUGGESTED CHANGE:

Add Question (#1.e.): "If neonatal death, give State ______
and municipality ______ of birth."



Local Registrar's No. ____________

Primary Dist. No. ____________

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HEALTH
VITAL STATISTICS

CERTIFICATE OF LIVE BIRTH

1. PLACE OF BIRTH a. County

b. City, borough, or township

c. Name of hospital or institution

2. MOTHER'S MAILING ADDRESS a. Street address, R D or box number

b. Post office, state, and zip code

3. INFORMANT

CHILD

4. THIS CHILD'S NAME a. (First) b. (Middle) c. (Last)

5. THIS CHILD'S SEX

6 a THIS BIRTH WAS Single ☐ Twin ☐ Triplet ☐

6 b If TWIN or TRIPLET This child was born 1st ☐ 2nd ☐ 3rd ☐

7 DATE OF BIRTH (Month) (Day) (Year)

FATHER

8. FATHER'S FULL NAME a. (First) b (Middle) c. (Last)

9 HIS AGE Years

10 HIS BIRTHPLACE (State or foreign country)

11. a. HIS USUAL OCCUPATION

11. b KIND OF BUSINESS OR INDUSTRY

MOTHER

12. MOTHER'S FULL MAIDEN NAME a. (First) b. (Middle) c. (Last)

13 HER AGE Years

14. HER BIRTHPLACE (State or foreign country)

15. WHERE DOES MOTHER ACTUALLY LIVE? a. State b. County

16. CHILDREN Previously Born to This Mother (DO NOT include this child)

a How many are NOW living?

b. How many were born alive but are NOW DEAD?

c. How many were delivered dead after sixteen weeks pregnancy?

c. Does Mother Live in a Township? (NOT within the limit of a city or borough)

☐ YES, she lives in ____________ Township.

☐ NO, she lives within the actual limits of ____________ City or Borough

17. I hereby certify that this child was born alive on the date stated above at ____________ m., E T

Signed ____________ ☐ M.D. ☐ D O. ☐ Other (Specify)

Date Signed ____________

Certifier's Address ____________

18. DATE RECEIVED FOR FILING

19 LOCAL REGISTRAR'S SIGNATURE

S S No.

CONFIDENTIAL medical report below MUST be completed for MEDICAL and HEALTH use

20. FATHER'S RACE

21. MOTHER'S RACE

22 a. LENGTH of PREGNANCY in ____________ COMPLETED WEEKS

22 b. WEIGHT OF CHILD AT BIRTH ______ grams or ______ lbs. ______ oz.

23 LEGITIMATE? Yes ☐ No ☐

24. IN WHAT TRIMESTER WAS FIRST VISIT PRENATAL CARE? 1st ☐ 2nd ☐ 3rd ☐ No visit ☐ Unknown ☐

25 SEROLOGIC TEST for SYPHILIS Yes ☐ No ☐ Date

26. METHOD OF DELIVERY

27. DESCRIBE ANY CONGENITAL MALFORMATION

28 DESCRIBE ANY COMPLICATION OF LABOR

29. DESCRIBE ANY BIRTH INJURY

30. DESCRIBE ANY COMPLICATION OF PREGNANCY

(H105 Rev. 3-73 500M 3-72)

SUGGESTED CHANGES:

Deletions: From front of Certificate as indicated by hatching (above).
Additions: To back of Certificate as indicated on the following page.

PRENATAL

1. Complications of Pregnancy

☐ None
☐ Pre-eclampsia
☐ Hypertension
☐ German Measles
☐ Significant anemia
☐ Diabetes
☐ Erythroblastosis
☐ Other (specify)

____

2. Was Mother's blood tested for Rh factor during this or any previous pregnancy?

☐ No
☐ Yes, Positive
☐ Yes, Negative, sensitized
☐ Yes, Negative, not sensitized

3. Was Mother's amniotic fluid screened?

☐ Yes
☐ No

INFANT AT BIRTH

☐ Normal
☐ Slight asphyxia, resuscitation required
☐ Severe asphyxia, extensive resuscitation
☐ Dead
☐ Apgar Score

1 minute ________________

5 minute ________________

☐ Birth Injury (specify)

____

☐ Congenital Malformation (specify)

____

☐ Other (specify)

____

LABOR AND DELIVERY

1. Conditions of Labor

☐ Spontaneous
☐ Induced
☐ Normal
☐ Placenta previa
☐ Premature separation of placenta
☐ Other intrapartum hemorrhage
☐ Prolapse of cord
☐ Breech presentation
☐ Other malpresentation

____

☐ Cephalopelvic disproportion
☐ Premature rupture of membranes
☐ Other (specify)

____

____

2. Method of Delivery

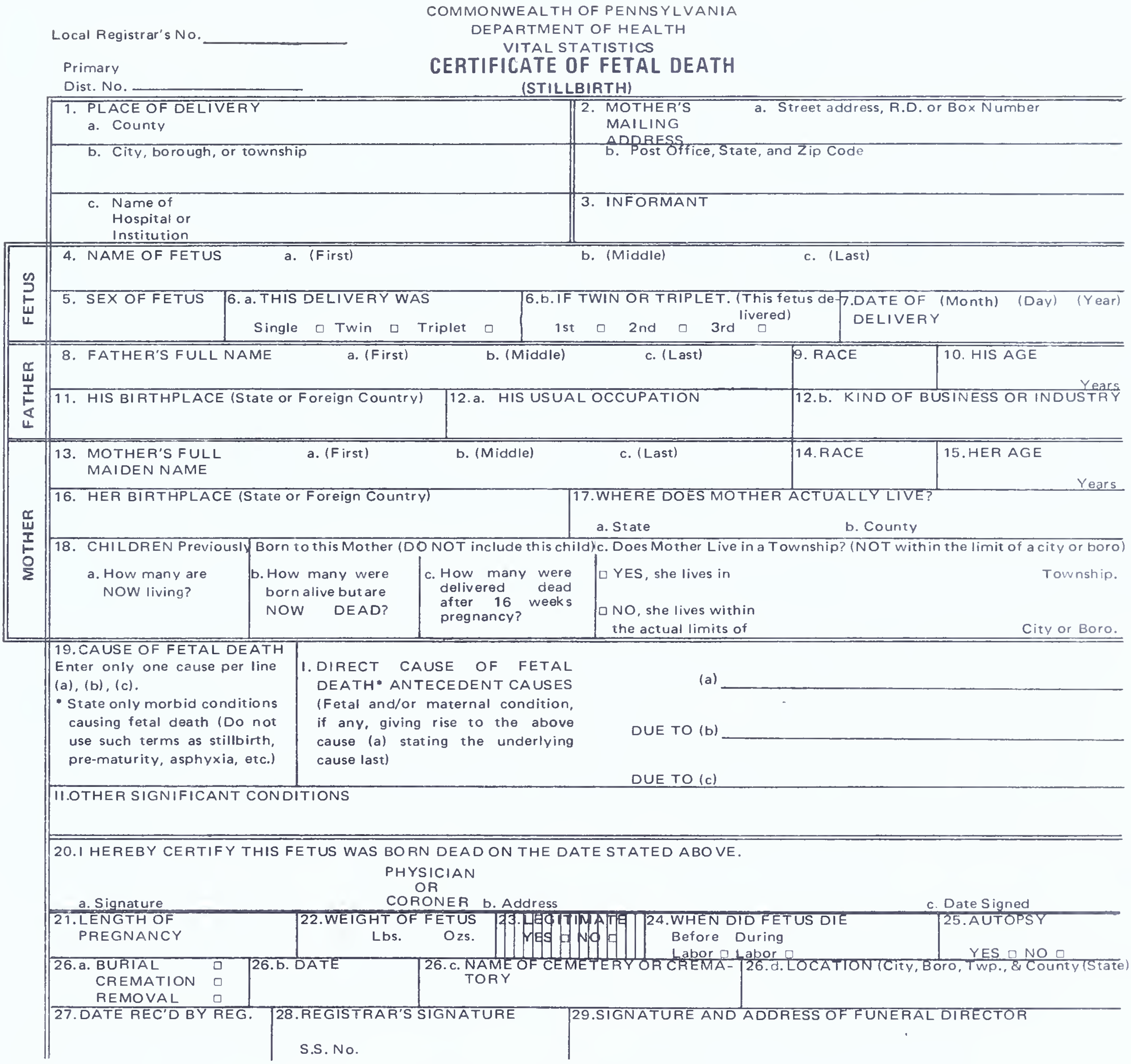
☐ Spontaneous
☐ Low forceps
☐ Mid forceps
☐ Breech
☐ Breech extraction
☐ First Caesarean Section
☐ Repeat Caesarean Section
☐ Caesarean hysterectomy
☐ Internal version/extraction
☐ High forceps
☐ Other (specify)

____

3. Intrapartum Monitoring

☐ Stethoscope
☐ Intermittent electronic
☐ Continuous electronic
☐ Fetal blood gases

APPENDIX E



Local Registrar's No. ____________

Primary
Dist. No. ____________

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HEALTH
VITAL STATISTICS

CERTIFICATE OF FETAL DEATH
(STILLBIRTH)

1. PLACE OF DELIVERY
a. County
b. City, borough, or township
c. Name of Hospital or Institution

2. MOTHER'S MAILING ADDRESS
a. Street address, R.D. or Box Number
b. Post Office, State, and Zip Code

3. INFORMANT

FETUS

4. NAME OF FETUS a. (First) b. (Middle) c. (Last)

5. SEX OF FETUS

6. a. THIS DELIVERY WAS Single ☐ Twin ☐ Triplet ☐

6.b. IF TWIN OR TRIPLET. (This fetus delivered) 1st ☐ 2nd ☐ 3rd ☐

7. DATE OF DELIVERY (Month) (Day) (Year)

FATHER

8. FATHER'S FULL NAME a. (First) b. (Middle) c. (Last)

9. RACE

10. HIS AGE Years

11. HIS BIRTHPLACE (State or Foreign Country)

12.a. HIS USUAL OCCUPATION

12.b. KIND OF BUSINESS OR INDUSTRY

MOTHER

13. MOTHER'S FULL MAIDEN NAME a. (First) b. (Middle) c. (Last)

14. RACE

15. HER AGE Years

16. HER BIRTHPLACE (State or Foreign Country)

17. WHERE DOES MOTHER ACTUALLY LIVE? a. State b. County

18. CHILDREN Previously Born to this Mother (DO NOT include this child)
a. How many are NOW living?
b. How many were born alive but are NOW DEAD?
c. How many were delivered dead after 16 weeks pregnancy?

c. Does Mother Live in a Township? (NOT within the limit of a city or boro)
☐ YES, she lives in ____________ Township.
☐ NO, she lives within the actual limits of ____________ City or Boro.

19. CAUSE OF FETAL DEATH
Enter only one cause per line (a), (b), (c).
* State only morbid conditions causing fetal death (Do not use such terms as stillbirth, pre-maturity, asphyxia, etc.)

I. DIRECT CAUSE OF FETAL DEATH* ANTECEDENT CAUSES (Fetal and/or maternal condition, if any, giving rise to the above cause (a) stating the underlying cause last)
(a) ____________
DUE TO (b) ____________
DUE TO (c)

II. OTHER SIGNIFICANT CONDITIONS

20. I HEREBY CERTIFY THIS FETUS WAS BORN DEAD ON THE DATE STATED ABOVE.
a. Signature ____________ PHYSICIAN OR CORONER b. Address ____________ c. Date Signed

21. LENGTH OF PREGNANCY

22. WEIGHT OF FETUS Lbs. Ozs.

23. LEGITIMATE YES ☐ NO ☐

24. WHEN DID FETUS DIE Before Labor ☐ During Labor ☐

25. AUTOPSY YES ☐ NO ☐

26.a. BURIAL ☐ CREMATION ☐ REMOVAL ☐

26.b. DATE

26.c. NAME OF CEMETERY OR CREMATORY

26.d. LOCATION (City, Boro, Twp., & County (State)

27. DATE REC'D BY REG.

28. REGISTRAR'S SIGNATURE
S.S. No.

29. SIGNATURE AND ADDRESS OF FUNERAL DIRECTOR

(H105.024 Rev. 5/73)

SUGGESTED CHANGES:

Deletions: From front of Certificate as indicated by hatching (above).
Additions: To back of Certificate as indicated on the following page.

PRENATAL

1. Complications of Pregnancy

☐ None
☐ Pre-eclampsia
☐ Hypertension
☐ German Measles
☐ Significant anemia
☐ Diabetes
☐ Erythroblastosis
☐ Other (specify)

____

2. Was Mother's blood tested for Rh factor during this or any previous pregnancy?

☐ No
☐ Yes, Positive
☐ Yes, Negative, sensitized
☐ Yes, Negative, not sensitized

3. Was Mother's amniotic fluid screened?

☐ Yes
☐ No

INFANT AT BIRTH

☐ Normal
☐ Slight asphyxia, resuscitation required
☐ Severe asphyxia, extensive resuscitation
☐ Dead
☐ Apgar Score

1 minute ________________

5 minute ________________

☐ Birth Injury (specify)

____

☐ Congenital Malformation (specify)

____

☐ Other (specify)

____

LABOR AND DELIVERY

1. Conditions of Labor

☐ Spontaneous
☐ Induced
☐ Normal
☐ Placenta previa
☐ Premature separation of placenta
☐ Other intrapartum hemorrhage
☐ Prolapse of cord
☐ Breech presentation
☐ Other malpresentation

____

☐ Cephalopelvic disproportion
☐ Premature rupture of membranes
☐ Other (specify)

____

____

2. Method of Delivery

☐ Spontaneous
☐ Low forceps
☐ Mid forceps
☐ Breech
☐ Breech extraction
☐ First Caesarean Section
☐ Repeat Caesarean Section
☐ Caesarean hysterectomy
☐ Internal version/extraction
☐ High forceps
☐ Other (specify)

____

3. Intrapartum Monitoring

☐ Stethoscope
☐ Intermittent electronic
☐ Continuous electronic
☐ Fetal blood gases

APPENDIX F

SURVEY OF HOSPITALS, COMMONWEALTH OF PENNSYLVANIA,
COMMITTEE ON FETUS AND NEWBORN,
PENNSYLVANIA CHAPTER
AMERICAN ACADEMY OF PEDIATRICS - 1972

Total number of hospitals responding = 158 (approx. 97%)

Number of hospitals - deliveries/yr.	<500	=	57	36%
	500-749	=	29	18%
	750-999	=	19	12%
	1000-2000	=	40	25%
	>2000	=	13	8%
Number of hospitals - premature/yr.	<50	=	97	64%
	50-100	=	34	22%
	>100	=	21	14%
	unknown	=	3	1%
Number of hospitals - high risk/yr.	<50	=	70	
	50-100	=	12	
	101-200	=	9	
	>200	=	13	
	unknown	=	54	
Hospitals with Intensive Care or Premature Nurseries		=	96	60%
Number of hospitals with Dept. in charge of nurseries	OBS.	=	82	53%
	Pediat.	=	72	45%
	Other	=	4	2%
Number of hospitals with pediatrician in charge of nurseries		=	117	70%
Adequacy of facilities & personnel (self-assessment)	inadequate	=	14	9%
	adeq. in part	=	60	38%
	adequate	=	62	39%
	superior	=	22	14%
Number of hospitals with surgical facilities for newborns		=	74	47%
Number of hospitals with:				
a. adequate number of nurses		=	103	
b. adequate number of trained nurses		=	91	

SURVEY OF HOSPITALS (cont.)

Number of hospitals with bassinets	<10	=	14	9%
	10-20	=	62	39%
	21-30	=	41	26%
	>30	=	41	26%
Number of hospitals with incubators	<5	=	62	39%
	5-10	=	73	46%
	>10	=	23	15%
Number of hospitals with servo-controlled incubators		=	120	

REPORT OF THE COMMITTEE ON FETUS AND NEWBORN OF THE PENNSYLVANIA CHAPTER, AMERICAN ACADEMY OF PEDIATRICS.

This Report is concerned with the Survey of Hospitals conducted in the Commonwealth by this Committee in 1972. There was approximately a 97% response to the questionnaire sent out by the Committee, with 158 hospitals responding.

It is apparent that the majority of the hospitals in the Commonwealth (66%) deliver fewer than 1000 infants per year, and that more than half (54%) deliver fewer than 750 infants. Of these, only a very few are capable of managing the intensive care of the newborn who is sick, either medically or surgically, and almost none are presently equipped for transport of sick infants at this time.

Only two-thirds of the hospitals consider their nursing staffs adequate in number or training or both for their current responsibilities. The figure would doubtless be very small if each were asked to assess nursing capability for intensive care. It is concluded that this vital factor, trained and sufficient nursing staff, should have high priority in any planning for regional infant intensive care.

Although 96 hospitals (60%) have nurseries designated "intensive care" or "premature", we do not know the actual capacities of these units to assume the burden of regional intensive care without assessment by site visit and details of staffing not covered in our survey. Certain nurseries may well have structural limitations that would preclude conversion to regional centres without renovation and remodelling. Geographic location/ population density are factors bearing on the desirability of conversion to a regional centre role, and the survey does not specifically indicate this combined aspect.

Hospitals claiming facilities for surgical care of neonates number 74, or 47%. In this regard, only site visitation could assess the adequacy of each institution to serve as a regional centre for surgical care. The survey does not reveal the technical competence of medical and nursing staffs to perform in this area, let alone specific ancillary personnel, resident house staff, and physical facilities available. It must be noted that a hospital's present capacity to undertake the management of acute surgical emergencies in the newborn cannot be equated with the capability of treating out-born surgical problems of either acute or elective nature of diverse aetiology as would be required of a regional centre. It must be noted also that the survey did not attempt to ascertain the availability of anesthesiologists trained in neonatal problems, nor personnel trained in neonatal resuscitation.

Only 15% of the responding hospitals have more than 10 incubators. The majority of institutions (120) of whatever size, report at least one servo-control unit. Establishment of a regional centre at any institution would require the investment of significant funds in this type of equipment, a cost item that could be substantial.

Report of the Committee on Fetus and Newborn (cont.)

In 82 hospitals (53%) nurseries are under the control of the Department of OBSTETRICS, although in half of these direct supervision is by a pediatrician. In 72 hospitals (45%) the Department of PEDIATRICS has charge of the nurseries.

The survey reveals that nurseries under direction of Depts. of Obstetrics have an average of 2.6 items of monitoring equipment. Those under the direction of Depts. of Pediatrics have an average of 4.6 items for monitoring fetus and newborn. There is a bias to this observation from the data, since larger institutions tend to place nurseries under the Dept. of Pediatrics, and such hospitals are usually better equipped, or have more sophisticated equipment. However, it may be seen in the raw data of the survey that small hospitals whose nurseries are under the direction of a Dept. of Pediatrics also tend to be equipped with more, and more advanced, items for monitoring.

All institutions but one have indicated a willingness to participate in a programme of regional infant intensive care, one way or another, and this response is gratifying. The response, however, may indicate the opinion of the responsible hospital administrators rather than a consensus of each medical staff or hospital board, so that we cannot be assured that resistance to the concept of regionalization and a given institution's place in it does not exist.

As the idea of regional infant intensive care spreads, and its advantages may be found to outweigh objections of it, support may prove to be very substantial. A proper method of enlisting the informed approval of the general medical community would seem necessary, since no programme of regionalization can be effectively established without the support of the Commonwealth's practicing physicians.

The cost of establishing regional centres in communities where they do not already exist or cannot be set up with minimum effort will be high. It is doubtful that any institution can underwrite such costs itself, nor maintain a programme of regional infant intensive care without some form of subsidy. Systems of transport must be devised for each region, and the funding of these systems must be arranged, not only for the initial vehicular support and its equipment, but for the maintenance of the system.

The Committee fully supports the establishment of centres for regional infant intensive care, and transport systems to make this effective. It believes that there is a need for such centres, and that their cost will not even equal the burden in money and lives of our present haphazard system (which is no system at all) of treating the newborn infant at risk. We are of the opinion that regional centres can be established without an impossible demand on the present medical resources of the Commonwealth.

Report of the Committee on Fetus and Newborn (cont.)

The graph which accompanies the tabulation of the survey plots the number of deliveries per year for each of the responding hospitals against a score designed by the undersigned to indicate the relative adequacy of facilities and personnel for newborn care. Mortality rates have not been included in the scoring system. The system is explained on attached pages.

An arbitrary score of 30 is considered as the minimum for an institution's designation as a regional centre. This score is based, of course, on current levels of capability, and some hospitals may be found inadequate for reasons not apparent from the survey, and others may qualify on grounds also not apparent from the relatively limited nature of the survey.

We believe that the results of this survey point up the necessity for on site inspection and review of the facilities of any hospital whose enlistment as a reception centre for regional intensive infant care is being entertained.

Respectfully submitted,

Thomas R. C. Sisson, M.D.
Chairman, Committee on
Fetus & Newborn, Penna.
Chapter, Amer. Acad. Pediatrics

RESULTS OF SCORING

Deliv./yr.	n	score range	mean score
<500	57	5 - 19	12
500-749	29	10 - 30	19
750-999	19	14 - 30	21
1000-2000	40	15 - 36	26
>2000	13	26 - 37	32

QUESTIONNAIRE ON NURSERIES

COMMITTEE ON FETUS AND NEWBORN

PENNSYLVANIA CHAPTER

AMERICAN ACADEMY OF PEDIATRICS

1. How many basinetts? ________________

2. How many incubators? ________________

    a. Do these include servo-control types? ________________

3. How many deliveries per annum? ________________

    a. of these how many are

        1. premature? ________________

        2. high-risk? ________________

4. Neonatal mortality --- latest annual figures available

    a. full-term? ________________

    b. premature? ________________

5. Do you have more than one nursery such as:

    a. ward yes_____ no_____

    b. private yes_____ no_____

    c. full-term yes_____ no_____

    d. isolation yes_____ no_____

    e. premature or intensive care? yes_____ no_____

6. Do you consider your nursing staff optimum for care of high-risk infants in respect to:

    a. number (round-the-clock coverage) yes_____ no_____

    b. training yes_____ no_____

7. Which hospital department is responsible for your nursery (ies)? for your nursing staff?

   a. Pediatrics ______________

   b. Obstetrics - Gynecology ______________

8. Is the physician-in-charge of your nursery (ies) a Pediatric specialist? yes_____ no_____

9. Is your hospital delivery room - nursery facility equipped for fetal and neonatal monitoring?

   a. Doptone yes_____ no_____

   b. Amniotic fluid analysis yes_____ no_____

   c. Apnea monitor yes_____ no_____

   d. Heart rate monitor yes_____ no_____

   e. X-ray in nursery yes_____ no_____

   f. I.V. infusion pump yes_____ no_____

   g. Oxygen analyzer yes_____ no_____

   h. Other yes_____ no_____

10. Do laboratory facilities in your hospital permit rapid monitoring of arterial blood gases for infants receiving oxygen therapy?

    yes_____ no_____

11. Do your laboratory facilities permit repeated monitoring of serum bilirubin concentrations by suitable micro-techniques for newborns?

    yes_____ no_____

12. Are your facilities and personnel suitable for the care of seriously ill infants, such as very small prematures, infants with severe respiratory distress, severe hemolytic disease of the newborn, etc.?

Check One

a. inadequate __________

b. adequate in part __________

c. adequate __________

d. superior __________

13. Are your facilities and personnel suitable for the surgical treatment of newborn infants? yes_____ no_____

14. Do you accept sick infants from other institutions?

you_____ no_____

15. Do you favor a system of transport for newborns requiring highly specialized care from less-well equipped hospitals to regional centers designed for such care? yes_____ no_____

16. If in favor of such a system, would you participate either in sending or receiving such infants? yes_____ no_____

APPENDIX F

EXPLANATION OF SCORING SYSTEM

		SCORE
Question 1:		
a. bassinets -	10	1
	10-20	2
	21-30	3
	30	4
b. incubators -	5	1
	5-10	2
	10	3
	if servo-controlled, add 1 to score	
Question 2:		
a. deliveries/year	500	0
	500-749	2
	750-999	3
	1000-2000	4
	2000	5
Question 3:		
a. prematures/year	15	0
	15-50	1
	51-100	2
	100	3
b. high risk/year not scored		
Question 4: Neonatal Mortality - not scored		
Question 5:		
a. Intensive Care or Premature Nursery:	NO	0
	YES	1
Question 6:		
a. adequate number of nurses:	NO	0
	YES	1
b. adequate training of nurses	NO	0
	YES	1
Question 7:		
a. Dept. in charge of nurseries:		
	Obstetrics	0
	Pediatrics	1
Question 8:		
a. Pediatric specialist in charge:	NO	0
	YES	1

Question 9:

a. monitoring equipment: score 1 for each item listed on survey (a - h). Score of 0 - 8 possible.

Question 10:

a. facility for arterial blood gases:

NO 0
YES 1

Question 11:

a. facility for micro serum bilirubin:

NO 0
YES 1

Question 12:

a. assessment (self) of facilities and personnel:

inadequate = a = 0
adequate in part = b = 1
adequate = c = 3
superior = d = 4

Question 13:

a. facility for suggical treatment of newborns

NO 0
YES 1

Question 14:

a. hospital accepts sick infants:

NO 0
YES 1

Question 15: not scored

Question 16: not scored

TO: William N. Mebane, M.D.
Chairman, Pennsylvania Chapter
American Academy of Pediatrics

FROM: Thomas R. C. Sisson, M.D.
Chairman, Committee on Fetus
and Newborn

SUBJ: Regionalization of Care

The Committee on Fetus and Newborn recommends:

1. The regionalization of intensive care for the sick newborn infant in conditions of both medical and surgical conditions.

2. The endorsement of the statement of policy on regionalization made by the A.M.A. Committee on Maternal and Child Care on 12/14/70.*

   a) This has received the endorsement of the American College of Obstetrics and Gynecology and the American Academy of Pediatrics.

3. That systems for transfer of infants requiring such care from institutions with inadequate staffing and/or facilities to established regional centres be established.

   a) That transportation facilities be funded by appropriate government instrumentalities.

   b) That such systems be organized in relation to and in conjunction with transport mechanisms for other health care delivery needs; such as cardio-pulmonary intensive care transport, etc., but not necessarily in a duplicate system unless local conditions require it.

   c) That the establishment of transport systems is secondary to the establishment of regional centres for intensive care of the newborn.

4. That consolidation of small obstetric services (less than 500 deliveries per year) be encouraged and recommended by the A.C.O.G.

   a) In order that nursery services may also be consolidated for improved care, staffing, and facilities.

---

* appended

5. That regional care of the high-risk obstetrical patient be encouraged:
    - a) So that intensive care of the newborn of such patients with potentially high-risk babies may be more quickly accomplished.

    - b) Also that need for transportation of sick infants may thus be reduced.

6. That the design and operation of regional intensive care units for the newborn should be allowed flexibility in regulation to permit the introduction of advanced and innovative techniques.

7. That broad discretionary authority be granted to Directors of Regional Intensive Care Units for the Newborn by the regulatory agencies of the Commonwealth and local governments; thus to permit useful innovations for the improvement of this type of health care delivery in the light of new and changing medical knowledge.

8. That the establishment of regional centres should be instituted with due regard to geographic, climatic, and demographic conditions of the various regions of the Commonwealth.
    - a) That facility of transportation, distance, and other factors be considered in setting guidelines or regulations for consolidation of services and location of centres.

The Committee expresses the opinion that regionalization of intensive care of the newborn will result in reduction of perinatal morbidity and mortality, of neurologic sequelae in surviving infants and will further a significant reduction in cost of health care delivery.

12/70

5. That [illegible] part of the [illegible] be [illegible]

a) [illegible]

[illegible] potential [illegible]

[illegible] accomplished.

b) [illegible]

may [illegible]

6. That [illegible]

unlike [illegible]

regulation [illegible]

various [illegible]

7. That [illegible]

of Regional [illegible]

regulatory [illegible]

there [illegible]

type of [illegible]

medical [illegible]

8. That [illegible]

institu[illegible]

graphic [illegible]

a) [illegible]

other [illegible]

[illegible]

The Committee [illegible]

care of the [illegible]

and naturally [illegible]

further [illegible]

12/70

COMMUNITY AND/OR REGIONALIZED PERINATAL INTENSIVE CARE

Application of recent advances in scientific knowledge and skills in the intensive care management of high-risk pregnant women and high-risk newborn infants will result in reduction of present maternal and infant mortality. A major contribution to such a program is the development of a community (or regional) centralized hospital-based newborn intensive care unit. Concentration of high-risk infant care programs in hospitals specially staffed and equipped to provide optimal care is a proven lifesaving mechanism for infants at risk.

The AMA urges that in every community (or if more appropriate geographical region) attention be directed to the development and operation of such special care facilities. Goals in these programs should include:

1. Programs to identify the high-risk pregnancy in sufficient time to allow for delivery at those hospitals which are staffed, equipped, and organized for optimal perinatal care.

2. Programs for the early recognition of high-risk infants not identified during the prenatal period, and which provide for the prompt transfer of a distressed infant to a more appropriately equipped facility when indicated. Arrangements for transport should be an integral part of the planning for community-centered programs.

Nov. 12 Draft approved by AMA Committee on Maternal & Child Care for transmission to the Board of Trustees.

The AMA recognized that the implementation of community and/or regionalized perinatal programs is a responsibility of physicians, government, and the public and encourages:

1. Training programs for medical and paramedical personnel necessary to staff regional facilities.

2. Allocation of facilities and equipment within communities and the development of guidelines, consistent with state law, for the operation of regional facilities.

3. Continuing research into the etiologic factors responsible for the high-risk infant and improving methods of medical management.

4. Continuing evaluation of the results of the regionalized programs.

12/14/70

APPENDIX G

NEWBORN SERVICES

- 20.0 Newborn
  - 20.1 Definitions
  - 20.2 Administration and Personnel
  - 20.3 Delivery Room
    - .1 Equipment
    - .2 Care
  - 20.4 Nurseries
    - .1 General
    - .2 Units
      - .1 Well Infant
      - .2 Isolation Area
      - .3 Special Care
    - .3 Construction and Capacity
    - .4 Equipment and Supplies
    - .5 Oxygen Control
    - .6 Temperature Control
  - 20.5 Nursery Care
    - .1 Physician's Services
    - .2 Control of Infection
    - .3 Housekeeping and Maintenance
  - 20.6 Care by Parents
  - 20.7 Laboratory and Radiological Services
  - 20.8 Recording Procedures
  - 20.9 Reporting Procedures
  - 20.10 Special Care Nurseries
    - .6 Transfer Nurseries

20.0 Newborn Services (these regulations shall apply to hospitals with Obstetrical Services and to those receiving newborn infants in transfer)

20.1.0 DEFINITION OF TERMS

20.1.1 The term "nursery or newborn service" shall mean that part of a hospital or institution in which newborn infants receive care as a regular practice.

20.1.2 The term "Nursery Committee" shall mean a committee composed of the physician in charge of nurseries as chairman and representatives of obstetrical, pediatric, family practice, nursing, administrative and other related services. The chief responsibility of this committee shall be to develop operational policies and plans for the nursery service in all phases; i.e., educational, professional, physical and procedural.

20.1.3 The term "labor room" shall mean a room for parturient patients in labor, distinct from the bedrooms and any operating or delivery rooms.

20.1.4 The term "delivery room" shall mean a room distinct from the bedrooms and set apart for the delivery of parturient patients.

20.1.5 The term "maternity bed" shall mean a bed located on the maternity service for a maternity patient other than a bed in a labor, delivery or recovery unit.

20.1.6 The term "rooming-in" or "modified rooming-in" shall mean an arrangement that allows the mother and her newborn infant to be cared for together in a setting that allows the mother to have access to her infant during all or a substantial part of the day, and the father to have closer contact with mother and infant during the hospital stay.

20.1.7 The designation "full term infant" shall mean all infants known to be delivered at 37 or more weeks of gestation.

20.1.8 The term "premature infant" shall mean an infant known to be delivered at less than 37 weeks gestation regardless of birth weight.

20.1.9 The term "low birth weight infant" shall mean an infant weighing 2500 grams (five and one-half pounds) or less at birth, regardless of length and gestation.

20.1.10 The term "high risk infant" shall mean an infant who, on the basis of socio-economic, genetic or pathophysiologic history prior to delivery, or on the basis of findings in the newborn period, manifests or is likely to manifest persistent and significant signs of distress. This term includes, but is not limited to the following categories or conditions.

20.1.10.1 All low birth weight infants with a birth weight below 2000 grams, all infants of less than 34 weeks gestation, and all low birth weight or premature infants who show any abnormal signs.

20.1.10.2 Any infant showing persistent and significant signs of illness. This definition includes those with respiratory distress, congenital anomalies, tumors, jaundice, seizures, infections, metabolic distress or other conditions which pose an immediate threat to neonatal survival.

20.1.10.3 All infants with serious feeding difficulties, excessive lethargy or instability of body temperature.

20.1.10.4 All infants who have experienced significant abnormalities in labor or delivery (of maternal or infant origin).

20.1.10.5 Infants of drug addicted or habituated mothers, diabetic mothers, toxemic mothers, iso-immunized mothers or those with other maternal illness which may affect the fetus.

20.1.10.6 All infants requiring major surgical procedures.

20.1.11 The term "special care nursery" shall mean a nursery specifically equipped and staffed for the care and treatment of high risk infants and those otherwise in need of intensive care.

20.1.12 The term "isolation area" shall mean a facility where infants exposed to potential sources of infection or suspected of or demonstrated to have any communicable disease may be housed and nursed, pending diagnosis, disposition or completion of treatment. This isolation area should be served by nursery nursing personnel.

20.1.13 The term "well infant nursery" shall mean a nursery for the care of well newborn infants.

20.1.14 The term "newborn recovery area" shall mean an area where all infants shall be examined and observed immediately following delivery, pending decision as to need for other than routine care in a well infant nursery and institution of diagnostic and therapeutic measures, if required.

20.1.15 The term "nursing care hours" shall mean hours of care rendered by all professional and non-professional nursing service personnel.

20.1.16 The term "bassinet" shall mean a bassinet or crib used for an infant.

20.1.17 The term "transfer infant" shall mean a high risk infant or one otherwise in need of special care for whom appropriate facilities for diagnosis and treatment are not available in the maternity and newborn service in which the infant is born.

20.1.18 The term "transfer nursery" shall designate a special care nursery approved to receive transfer infants.

20.1.19 The term "parent contact area" shall mean space provided to permit parents to have physical contact with their newborn infants, particularly those in special care and transfer nurseries.

20.1.20 The term "contagion precautions" shall mean procedures, in addition to hand washing, for the control of the spread of infection.

20.1.21 The term "Department" shall mean the Pennsylvania Department of Public Health.

20.2.0 Nursery Administration and Personnel

20.2.1 A physician, either eligible for or certified by the American Board of Pediatrics or the American Osteopathic Board of Pediatrics, shall be designated as physician in charge (Chief of Newborn Services) of the nursery service. Exceptions must be approved by the Pennsylvania Department of Public Health.

20.2.2 The Chief of Newborn Services shall establish and serve as Chairman of a Nursery Committee to formulate specific nursery policies and requirements that include delivery room care of infants, nursery personnel and nursery procedures. These policies shall be in written form for inspection and approval by the Department and reviewed and revised at least annually.

20.2.3 A designated physician shall be on call at all times for problems of the newborn.

20.2.4 A registered professional nurse, specially trained and experienced in the care of normal and high risk infants, shall be designated as the nursing supervisor of the nurseries. At least one registered professional nurse shall be on duty in at least one nursery at all times. No nursery shall be left unattended.

20.2.5 Transfer and special care nurseries must have 24 hour coverage by at least one registered professional nurse.

20.2.6 All nursery personnel shall have education and nursing skills that are appropriate to their duties and assignments as may be determined from time to time by the Department.

20.2.7 Nursing personnel assigned to the newborn service shall have this as their sole patient care responsibility.

20.2.8 A sufficient number of nursing personnel shall be on duty at all times to provide adequate infant care in all nurseries.

20.3.0 Delivery Room Care of the Newborn

20.3.1 <u>Facilities and Equipment</u>

20.3.1.1 Delivery suite facilities shall include a newborn recovery area specifically equipped for evaluation and treatment of the newborn infant immediately after birth. An area of the delivery room set aside for infant care is acceptable.

20.3.2 Delivery Room Care

20.3.2.1 The Chief of Obstetrics and the Chief of Newborn Services shall formulate policies and procedures for delivery room care of infants that are consistent with the recommendations of the Nursery Committee. These policies and procedures shall be in written form and shall include provisions for the following:

20.3.2.1.1 Notification of the physician in charge of the infant and the nurse in charge of the nursery when the delivery of a potentially high-risk infant is expected.

20.3.2.1.2 Constant observation of newborns for distress while in the delivery area.

20.3.2.1.3 Continuity of care for all infants - especially ill infants - to be initiated in the delivery area.

20.3.2.1.4 Personal communication between the delivering physician and the physician who will be responsible for the continuation of care for high-risk infants.

20.3.2.2 The umbilical cord shall be clamped or tied by the use of an accepted means of providing constant tension to the shrinking cord.

20.3.2.3 A sample of cord blood for blood type, Rh, and Coombs Test shall be obtained on all infants born to Rh negative mothers and for all other infants with a family history of blood incompatibility.

20.3.2.4 Infant identification by an accepted duplicate system for both mother and infant shall be carried out in the delivery room and checked by the nurse or physician and, if possible, by the mother.

20.3.2.5 Prophylaxis against gonorrheal ophthalmia with 1% silver nitrate solution shall be carried out as soon as the infant's condition permits.

20.3.2.6 Every newborn shall be examined at the time of delivery and the following noted: condition at birth, including Apgar score (or its equivalent); time of sustained respirations; physical abnormalities or pathological states; and any evidence of distress.

20.3.2.7 A carefully planned procedure shall be instituted for the transportation of newborn infants to the nursery from the delivery room to insure maximum protection of the infant. Transfer of distressed infants to the nursery shall be done in such a manner as to minimize heat loss and to insure adequate oxygenation.

20.3.2.8 The newborn infant's record shall accompany him from the place of delivery to the nursery and be immediately available to nursery personnel. This record shall include information concerning the prenatal history, the course of labor, delivery, drug administration to mother and infant, Apgar score, relevant conditions of the mother, procedures performed on the infant in the delivery room, complications of any type, and other facts and observations relative to the infant's condition.

20.4.0 Nurseries

20.4.1 General

20.4.1.1 The maternity and newborn services shall be separate and apart from other hospital services and especially from potential sources of infection.

20.4.1.2 Well infant nursery facilities shall be sufficiently close to maternity beds that all infants may easily be taken to their mothers for feeding.

20.4.2 Nursery Units - All hospitals with maternity services shall provide well infant nurseries with areas for newborn recovery, observation and isolation, and provisions or arrangements for the care of high-risk infants.

20.4.2.1 Well Infant Nursery for the reception and care of newborn infants. Well newborn infants delivered within the hospital may be admitted directly to the well infant nursery.

20.4.2.2 Isolation Area for the reception and care of infants exposed to potential sources of infection, and infants suspected of, or having, any communicable disease.

20.4.2.3 Provisions for Special Care - for the reception, care and treatment of high risk infants.

20.4.2.3.1 All hospitals having an average daily census of four or more low birth weight infants or more than 1500 deliveries per year shall provide a special care nursery. Written plans for the special care nursery must be approved by the Department. Alternatively, such hospitals must submit for approval by the Department a written plan for transfer of high risk infants to a transfer nursery.

20.4.2.3.2 All hospitals with an average daily census of less than four low birth weight infants or less than 1500 deliveries per year must submit for approval by the Department a written plan for transfer of high-risk infants to a transfer nursery. Alternatively, such hospitals may provide special care nurseries, if the need for such a nursery is warranted by such factors as geographic location and birth

incidence of high-risk infants in that hospital. Written approval for such a special care nursery shall be granted only on the basis of written plans and description of facilities, equipment and staff for the care of high-risk infants in the hospital of birth.

20.4.3 Construction and Capacity

20.4.3.1 New construction shall conform to current recommendations to the Department.

20.4.3.2 The total number of bassinets shall equal at least the number of post-partum beds plus one bassinet per well infant nursery.

20.4.3.3 Space allocations should conform to current recommendations of the American Academy of Pediatrics.

20.4.4 Nursery Equipment and Supplies

20.4.4.1 Required equipment and supplies shall be based upon current recommendations of the American Academy of Pediatrics.

20.4.4.2 Individual bassinets and equipment for the exclusive use of the infant to whom it is assigned shall be provided and shall include all necessary supplies in covered containers to permit individualized infant care.

20.4.4.3 Each nursery shall have its own wash basin with hot and cold running water equipped with foot, knee or elbow control so that hand contact with the sink is avoided. A sufficient supply of antiseptic soap and disposable towels shall be readily available. Where paper towels are used, a dispenser of acceptable design shall be provided.

20.4.4.4 Special Care Nurseries shall be equipped with all equipment and supplies required for other nurseries.

20.4.5 Oxygen Control

20.4.5.1 Oxygen shall be administreed only with proper apparatus for its safe administration and control of concentration. Concentration of oxygen should not exceed a safe level commensurate with current concepts of oxygen therapy as recommended by the American Academy of Pediatrics.

20.4.6 Temperature Control

20.4.6.1 A stable year-round temperature shall be maintained in all nurseries.

20.5.0 Nursery Care

20.5.1 Physician's Services

20.5.1.1 All newborn infants shall have a complete physical examination by a physician or his authorized delegate in the delivery room and also within 24 hours after admission to the nursery and the results of the examinations recorded in the infant's chart.

20.5.1.2 Any infant who displays abnormal signs and symptoms at any time shall be examined by a physician as soon as possible.

20.5.1.3 All newborn infants shall be examined by the attending physician or his authorized delegate within 24 hours prior to discharge and the findings recorded in the infant's chart.

20.5.1.4 There shall be a method for the proper identification of the infant and mother, or other responsible person, at the time of discharge from the hospital. Infants discharged or transferred to another nursery or hospital shall be carefully identified.

20.5.2 Control of Infection

20.5.2.1 Common or group carriers for transporting infants to their mothers are prohibited.

20.5.2.2 Scrupulous hand cleansing, using currently accepted procedures, must be performed by all nursery personnel and visitors before and after each infant contact.

20.5.2.3 Other procedures for the control of infection (e.g., nursery attire, isolation, cleaning of equipment, etc.) shall accord with current recommendations of the American Academy of Pediatrics. These procedures, formulated by the Chief of Nursery Services and the Nursery Committee, shall be subject of the approval of the Department.

20.5.3 Housekeeping and Maintenance

20.5.3.1 At all times the nursery service shall be maintained in a clean and sanitary manner acceptable to the Department.

20.6.0 Care Given by Parents

20.6.1 Maternity and nursery services of hospitals that provide rooming-in services shall have written policies governing such procedures. These procedures shall be designed to prevent cross contamination.

20.7.0 Laboratory Services and Radiological Services

20.7.1 Available services shall include at a minimum: hemoglobin, hematocrit, Coombs test, blood type, Rh Type, urinalysis, bacteriologic cultures, spinal fluid analysis, and micro-chemical determinations for bilirubin, blood glucose, sodium, potassium, chloride and total protein on a 24 hours-a-day, seven days-a-week basis.

20.7.2 Radiological equipment and services shall be available on a 24-hours-a-day, seven days-a-week basis.

20.7.3 Each hospital with a newborn service shall provide immediate blood transfusion services.

20.8.0 Records - Records shall be maintained on all newborn infants. Their contents should accord with current recommendations of the American Academy of Pediatrics, including:

20.8.1 Obstetrical history of mother's previous pregnancies.

20.8.2 Description of complications of pregnancy or delivery.

20.8.3 List of complicating maternal disease.

20.8.4 Drugs taken during pregnancy, labor and delivery.

20.8.5 Duration of ruptured membranes.

20.8.6 Maternal ante-natal blood serology, blood typing, and Rh factors; Coombs test for maternal antibodies where indicated.

20.8.7 Complete description of progress of labor including reasons for induction and operative procedures, if any, signed by the attending physician or his authorized delegate.

20.8.8 Anesthesia, analgesia and medications given to mother and infant.

20.8.9 Condition of infant at birth to include Apgar Score (or its equivalent), resuscitation, time of sustained respirations, details of physical abnormalities, pathological states and treatments up to the time of transfer to the nursery.

20.8.10 Number of cord vessels, and any abnormalities of the placenta.

20.8.11 Date and hour of birth, birth weight and length, and period of gestation.

20.8.12 A written verification of eye prophylaxis.

20.8.13 Report of initial physical examination, including any abnormalities signed by the attending physician or his authorized delegate.

20.8.14 Progress notes, written by a physician, at intervals appropriate to the infant's condition, but at least every four days, with notation of any abnormalities, complications or unusual conditions.

20.8.15 Discharge physical examination (including head circumference and body length, unless previously done), recommendations and signature of attending physician or his delegate.

20.8.16 A listing of all diagnoses since birth, including discharge diagnosis.

20.8.17 Specific follow-up plans for infant's care.

20.8.18 Nursing Records as currently recommended by the American Academy of Pediatrics: Upon admission to a nursery, nurses should initiate and maintain records on all infants as to weight; type and volume of feedings; time of first voiding; time of passage of first stool; number, color, and consistency of stools; and temperature. If abnormalities are suspected or recognized, nurses shall also make notations on respiratory rate, dyspnea, color, cyanosis, jaundice, pallor, lethargy, twitching, motor activity, skin and buttocks, vomiting, condition of the eyes and umbilical cord and other relevant factors as indicated and warranted by the infant's condition. Treatments, medication and special procedures should also be recorded with time, date and the name and title of the individual who administers them.

20.9.0 Reports (to be added)

20.10.0 Special Care Nurseries

20.10.1 The Chief of the Nursery Service and the Nursery Committee shall specify those conditions or categories of infants who are to be designated as "high risk infants". In hospitals with special care nurseries, such infants shall be cared for in the special care nursery; in hospitals without a special care nursery such infants shall be transferred to a special care nursery (transfer nursery) in another hospital in accordance with an acceptable written plan and procedure approved by the Department.

20.10.2 In hospitals with special care nurseries, the Chief of the Nursery Service and the Nursery Committee shall develop written policies and procedures regarding admission of infants to special care nurseries.

20.10.3 Staff

20.10.3.1 Requirements for staffing of nurseries in general shall also apply to special care nurseries. In addition transfer and special care nurseries shall be staffed on every shift by at least one registered nurse who has special training, experience and interest in infants who require special care, and these nurseries shall be her sole responsibility.

20.10.3.2 A pediatrician designated by the Chief of the Nursery Service shall be on call 24 hours a day.

20.10.3.3 Private physicians and specialists may care for their patients in special care nurseries. However, the final authority for policy in special care nurseries shall reside with the Chief of the Nursery Service.

20.10.3.4 Additional ancillary nursery personnel employed to meet the needs of infants shall have suitable skills and training that meet such requirements as may be established by the Department.

20.10.4 Construction and Equipment - In addition to the previously cited requirements for the equipment of nurseries, the following shall be required for all new construction, renovation or expansion of Special Care Nurseries and should be available to all present facilities.

20.10.4.1 The construction and arrangement of the special care nursery shall permit immediate observation and accessibility of infants to personnel. Total nursery space, exclusive of anteroom, shall provide adequate floor space according to current recommendations of the American Academy of Pediatrics

20.10.4.2 Each infant shall have his own incubator and his own individual environment, where necessary, and with such individualized controls as heat, oxygen, suction, air turnover. Infants may be placed in bassinets, if conditions permit.

20.10.4.3 At least one oxygen outlet shall be provided for each incubator. Suction apparatus shall be easily available for each infant. A source of medically pure compressed air shall be available.

20.10.4.4 A double-grounded electrical outlet shall be provided for each incubator. Extra outlets may be required for compressed air or new electronic monitoring equipment. Some electrical outlets in the nursery shall be on the hospital's emergency electrical circuit.

20.10.4.5 Resuscitation equipment must be available. An effective method for preventing heat loss by the infant shall be available while he is undergoing any treatment.

20.10.4.5 Air within special care nurseries shall be non-recirculated and frequently turned over each hour.

20.10.5 Associated Services

20.10.5.1 Nursing and Social Services: Because of the unique problems involved in the total care of infants in special care nurseries, a definite written policy shall be developed by the Nursery Committee that provides for arrangements with the hospital nursing and social service departments and community health and social agencies and specifies the provisions that will be made for continuing care, follow-up and home assistance.

20.10.5.2 Parental Health Education: During the hospitalization of special care infants, provisions shall be made for physicians, nurses, and social service staff to assist parents to become acquainted with their infants and their problems.

20.10.5.3 Laboratory Services: In addition to the basic laboratory services required of all nurseries, a special care nursery shall provide or have immediately available adequate laboratory facilities for such laboratory determinations as may be deemed necessary for the special care nurseries by the Chief of Nursery Services on a 24-hours-a-day, seven days-a-week-basis.

20.10.5.4 Blood Bank: A hospital in which a special care nursery is located shall have a licensed blood bank, available to the nursery on a 24-hours-a-day, 7 days-a-week basis.

20.10.5.5 Radiological Services: A special care nursery shall have portable or fixed x-ray equipment to take films, available on a 24-hours-a-day, 7 days-a-week-basis.

20.10.6 Transfer Nurseries: All of the previous requirements for special care nurseries shall also apply to transfer nurseries.

20.10.6.1 All transfer nurseries shall be special care nurseries but certain special care nurseries will be designated by the Department as transfer nurseries that: 1. have available a full-range of consultative and specialty services; and 2. are located in accordance with geographic needs.

21.0 Obstetrical Services

21.1 Definition of terms

21.2 Administrative and professional requirements

21.3 Physical plant and equipment

21.4 Infection control

21.5 Use of labor rooms

21.6 Use of delivery rooms

21.7 Use of maternity unit

21.8 Visitors

21.9 Special procedures

21.10 Written standards and records

21.11 Exceptions to required staffing patterns

21.0 Obstetrical Services (Regulations applicable to hospitals providing obstetrical services)

21.1 Definition of terms

21.1.1 The term "obstetrics service" shall mean that part of a hospital or institution in which as a regular practice obstetric patients receive care pertaining to pregnancy.

21.1.2 The term "labor and delivery unit" shall mean that part of an obstetrics service used for care of patients during labor, delivery and the recovery period immediately following delivery; it should include physically contiguous labor room(s), delivery room(s) and ancillary facilities. Operating room(s), if used only for obstetrical or certain gynecologic procedures, and recovery room(s), if used only for postpartum obstetric patients or gynecology patients recovering from procedures performed in the labor and delivery unit, may be included in the labor and delivery unit.

21.1.3 The term "maternity unit" shall mean that part of an obstetrics service, other than labor and delivery unit, in which patients are housed.

21.1.4 The term "labor room" shall mean a room for obstetric patients in labor distinct from the maternity unit and any operating or delivery room.

21.1.5 The term "delivery room" shall mean a room set apart for the delivery of parturient patients and distinct from any operating room, labor room and the maternity unit.

21.1.6 The term "obstetric patient" shall generally mean any woman who is pregnant at any stage, parturient or recovering from parturition.

21.1.7 The term "gynecology patient" shall mean a woman with or suspected of having a condition related to her reproductive organs, but not currently in a state of pregnancy.

21.1.8 The term "rooming-in" or "modified rooming-in" shall mean an arrangement that allows the mother and her newborn infant to be cared for together in a setting that allows the mother to have access to her infant during all or a substantial part of the day, and the father to have closer contact with mother and infant during the hospital stay.

21.1.9 The term "Department" shall mean the Pennsylvania Department of Health.

21.2 Administrative and professional requirements (Exceptions must be approved by the Department).

21.2.1 A physician member of the medical staff, certified by or eligible for the American Board of Obstetrics or the American Osteopathic Board of Obstetrics and Gynecology, shall be designated Chief of Obstetric Service.

21.2.2 Each Chief of the Obstetric Service, in cooperation with a committee of staff physicians, nurses, administrators and other relevant personnel, shall establish policies for the proper conduct of the service. These policies shall be in written form, readily available to all appropriate personnel, and reviewed at least once annually for possible revision. Such policies shall include procedures for: consultations with members of other appropriate specialties as well as with obstetricians and gynecologists; management of mothers delivered prior to admission and those with presumed or actual infection; maternal or fetal distress; use of oxytocic agents.

21.2.3 A designated physician who is experienced in the practice of obstetrics shall be on call at all times for consultation and obstetrical emergencies.

21.2.4 A designated physician who is experienced in the practice of anesthesiology shall be on call at all times for consultation and anesthesia emergencies.

21.2.5 The chief of service shall establish written policies regarding the administration of anesthesia and the qualifications of persons who may administer anesthesia on the maternity service.

21.2.6 The obstetrical nursing service shall be under the supervision of a registered professional nurse who is experienced in maternity care.

21.2.7 A registered professional nurse experienced in obstetrical nursing shall be on duty in the labor and delivery unit whenever any patient is in the unit.

21.2.8 All personnel working in the obstetrics service shall be free of infection that might be transmitted to patients, as determined by the hospital's infection control committee.

21.3 Physical plant and equipment

21.3.1 The obstetrics service shall be physically separated from the other services of the hospital and shall include a labor and delivery unit and maternity unit. Clean gynecological patients may be housed on the obstetrical service.

21.3.2 The labor and delivery unit shall be considered a closed area, and appropriate restrictions shall be established and posted to govern entry into this unit by authorized persons only.

21.3.3 For all new construction, renovation or expansion of obstetrics service, at least two delivery rooms shall be provided if there are more than 500 deliveries per year.

21.3.4 Delivery room equipment and procedures.

21.3.4.1 Each delivery room shall be maintained and supplied as a separate unit that contains the equipment and supplies necessary for normal delivery, including examination and care of infant, and for the immediate management of complications in mother and infant.

21.3.4.2 Each delivery room shall be equipped for administration of inhalation and regional anesthesia.

21.3.4.3 Each delivery room shall have a functioning source of emergency electrical power.

21.3.4.4 Caesarean sections may be performed in an operating room on the surgical service or, preferably, an operating room within the labor and delivery unit. At least one delivery room shall be equipped for the performance of emergency caesarean sections; such a room shall be considered, for the purposes of these regulations, a delivery room and not an operating room.

21.3.4.5 Each delivery room shall have an emergency call or intercommunication system.

21.3.4.6 Oxygen and suction equipment which can be accurately regulated shall be available for both mother and infant in each delivery room.

21.3.4.7 Equipment for examination, identification and care of infant shall be available.

21.3.4.8 Patient identification: Identification shall be attached to the mother and newborn infant before they are removed from the delivery room. (Re. Act of April 20, 1925, P.L. 358 as amended).

21.3.4.9 Eye treatment of the Newborn. The eyes of all newborn infants shall have instilled a 1% silver nitrate solution by the physician or his designee within one hour of delivery.

21.3.5 Ancillary services and facilities:

21.3.5.1 All hospitals with obstetrical services shall provide written policies which implement a program for prevention of isoimmunization of Rh-negative mothers.

21.3.5.2 Each hospital with an obstetrics service shall provide immediate blood transfusion services.

21.3.5.3 Scrub sinks, equipped with elbow or knee or foot controls, hot and cold running water with mixer and hand scrubbing accessories, shall be available adjacent to or within all delivery rooms.

21.3.5.4 Phenylketonuria test: All hospitals with obstetrical services must comply with Act 251 of September 9, 1965, which provides for the testing of all newborns for phenylketonuria.

21.4 Infection Control

The hospital shall designate a committee which shall formulate specific policies for prevention, reporting and control of infections on the obstetrics service. These policies shall be in written form, readily available to all appropriate personnel, and reviewed at least once annually for possible revision. One member of the committee or other individual shall be delegated to receive reports of infections and to assist in interpretation and implementation of established policies. The policies shall include but not be limited to the following items:

21.4.1 If a patient is admitted to the labor and delivery area with suspected or confirmed transmissible infection, isolation precautions or other appropriate precautions shall be instituted and followed.

21.4.2 Written policies shall be established concerning use of delivery rooms by patients with diagnosed or suspected infection, and techniques for cleaning all delivery rooms following use by such patients. If possible, a special delivery room should be set aside for use by patients with diagnosed or suspected infection. If a regular delivery room is used for such a patient, it shall be thoroughly cleaned following use, in accordance with hospital policies and in a manner adequate to control the contamination.

21.4.3 Postpartum patients who develop or have undiagnosed febrile illness, fever due to an infectious process (other than infection of the urinary tract), or any nonfebrile transmissible infection shall be isolated by transfer to another floor or by some other acceptable procedure. Decision regarding isolation in individual cases shall be based on written policy of the hospital or shall be made by the physician-in-charge of the obstetrics service in consultation with Chief of Nursery Services.

21.5 Use of Labor Rooms

21.5.1 Sufficient medical and registered professional and licensed nursing staff shall be present in the labor and delivery unit for the observation and care of patients in labor whenever a labor room is occupied.

21.5.2 The chief of service and the obstetrical committee shall establish written policies, which shall be available on the labor and delivery unit, concerning the use of oxytocic drugs during each of the three stages of labor.

21.5.3 The chief of service and the obstetrical committee shall establish written policies, which shall be available on the labor and delivery unit, regarding the use and administration of anesthetics, sedatives, analgesics and other drugs.

21.6 Use of Delivery Rooms

21.6.1 A patient in a delivery room shall be under the immediate care of medical or professional registered or licensed nursing personnel at all times.

21.6.2 Aseptic surgical techniques shall be used in all delivery rooms.

21.6.3 Each obstetric patient shall be kept under close observation by competent professional personnel during the period of recovery after delivery, whether in the delivery room or in a recovery area, until she is transferred to the maternity unit.

21.6.4 All persons present in a delivery room in which explosive anesthetics are stored or in use shall observe necessary precautions against explosion and electric shock hazards, and shall wear appropriate antistatic apparel and conductive footwear.

21.7 Use of Maternity Unit

21.7.1 Gynecology patients may be housed on maternity units at the discretion of the chief of service. A maternity patient shall not be denied a bed because of the presence of gynecological patients.

21.8 Visitors

21.8.1 Visitor policies shall be developed by the Chief of Service and obstetrical committee.

21.9 Special Procedures

21.9.1 The hospital shall establish written policies for the performance of diagnostic radiologic examinations of pregnant patients, for the purpose of control of excessive radiation to fetus and mother. These policies shall be available to all appropriate personnel and reviewed at least once annually for possible revision.

21.9.1.1 A written request for a diagnostic radiologic examination of a pregnant patient shall be marked in such a way as to clearly indicate to the person taking the roentgenogram that the patient is pregnant.

21.10 Written Standards and Records

21.10.1 The obstetrics service shall abide by current recommendations of the American College of Obstetrics and Gynecology concerning written standards and records.

21.10.2 The obstetrics service shall establish and maintain a system for obtaining prenatal records or summaries of records of patients during the last trimester of pregnancy and for making them available to the staff of the labor and delivery unit when the patient is admitted for delivery. (See 20.3.2.8)

21.11 Exceptions to the required staffing regulations may be permitted for hospitals upon written approval of the Department, provided the following conditions are met:

21.11.1 The health, safety and well-being of patients are not jeopardized as a result of the staffing patterns.

21.11.2 The hospital is making bona fide efforts to secure qualified personnel.

21.11.3 A shortage of personnel exists in the area.

21.11.4 There are no other licensed hospitals with a full complement of qualified personnel within a reasonable distance.